

Ethnobotany of Traditional Cuisine of the Tai Phake, Assam, India

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Abstract

Since immemorial time, human from all the cultures worldwide have independently selected plants as food. Furthermore, the widespread traditional uses of natural herbs and medicinal plants in curing and preventing diseases are very well described in ancient texts. The tradition and speciality of a tribe is revealed by its cuisine as it reflects the culture of the tribe. The Tai Phake is one of the most significant Tai tribes inhabiting in nine different villages of Assam and they exhibit unique culture of traditional culinary system. The dietary habit of Tai Phake is quite simple and for the requirements of the food items they mostly depend upon the natural underutilized plant resources. Uses of aromatic spices in their food items is identified as cultural marker. Rice is the staple food and their two major meals consist of rice and vegetables (Sharma Thakur, 1982). The present paper aims to explore the food habit of Tai Phake including 6 rice items, 8 vegetable items, 8 fish and 4 meat items. They preserve bamboo shoots for long period in 3 different ways. Information was collected through semi-structured interview of 16 women of different villages. They have traditional technical knowledge of natural preservation of food materials. Ethnobotanical study can provide a new leaf that leads to conserve plant resources and natural preservation technology in traditional culinary system of Tai Phake.

Keywords

Tai Phake, traditional cuisine, Underutilized Plant resources, Preservation technology

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Introduction

Traditional food of a tribe plays an important role in establishing local identity, culture and custom and these cultural heritages are passed down from generation to generation (Abayrek and Gune, 2010; Inamdar, Chimmad and Naik, 2005). Ethnobotanical research into modern modes of subsistence often reveals that large inventories of edible plants are

recognised by traditional people (Cotton, 1997). Most studies on ethnobotany suggest that traditional botanical knowledge plays the major role extensively relating to the use and management of wild plant resources. Indigenous people who live in remote areas mostly rely on traditional foods that are collected from the surrounding environment (Azar and Aminpour, 1996). Several researchers have published papers on different tribes and their traditional knowledge of use and management of wild plant resources in culinary system, such as Iwasaki et al. 2006 worked on the Ainu people of Japan; M. Bodo has published his paper on food habits and traditional knowledge system of Bodo of Assam in 2016; Meithuanlungpau and Singh (2015) worked on food habits and food taboo of the Morom of Monipur; Viwatpanich (2012) published a paper in Austrian journal on nutritive values of traditional Mon food; Sukunti, Hakim and Mathews (2016) studied on local cuisine of Sasak tribe of Indonesia etc. This paper deals with the traditional cuisine of the Tai Phake people. The Tai Phake is one sub-group of the great Tai community of Northeast India among six sub-groups, inhabitants of nine different villages of Dibrugarh and Tinsukia district. They exhibit a rich cultural heritage in different socio-religious aspects and are still maintaining since 1756. Among all the cultures, the culinary culture of Tai Phake is one of the most significant cultures

and it includes all knowledge related to the production and consumption of food. Traditional cuisine and use of natural resources of Tai Phake is expected to have influence for regional and national discussion of traditional cuisine, diets and cultural heritage. The present research is pioneer to study and document the significant plant resources that used by the indigenous people of Tai Phake in their traditional food items before it is lost due to degradation of forest coverage on the results of natural calamities mainly by soil erosion.

1. Materials and Methods

1.1 Study Area

The study was conducted in five different Tai Phake villages of Assam (Fig. 1) out of which two villages viz. Nam Phake and Tipam Phake are situated in Dibrugarh district while Barphake, Phaneng, and Ning-gam are in Tinsukia district. Both districts fall under the northeast biogeographic zone and are situated on the south bank of the mighty Brahmaputra River. Nam Phake, Bar Phake, and Tipam Phake villages are located beside the Burhidihing River while Phaneg village is situated near Tirap River. The people are mainly dependent upon the luxuriant biodiversity of plant resources for their livelihood.

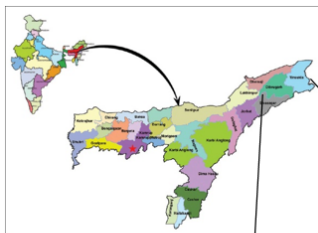


Figure 1. Map of Assam



Figure 2. Dibrugarh and Tinsukia district, Assam showing distribution of 9 Tai Phake villages. 1) Namphake, 2) Tipam Phake, 3) BorPhake, 4) Man mo, 5) Nong Lai, 6) Long Phake, 7) Ningam, 8) Moung Lang and 9) Phaneng

1.2 The People

The Tai Phake, a small population, inhabitant of riverbank areas of Dibrugarh and Tinsukia district of Assam, were originally a hill tribe within the great Tai community. The Tai peoples can be found stretching from Assam to the Chinese province of Kwansi and from Bangkok to the interior of Yunnan [?]. Tai Ahom is the first batch that entered Assam in the 13th century. The Tai Phake entered Assam during the Ahom Kingdom in the middle of the 18th century and settled

at first on the bank of Burhidihing river of Tinsukia district of upper Assam. Ethnobotanical study on traditional cuisine of Tai Phake hasn't been found extensively. As its objective of this paper would identify the plant resources associated with their traditional dietary practices.

The research procedure was carried out in three phases. In the first phase, a survey was conducted on traditional food of Tai Phake, and a list was prepared to identify the common food items of everyday meals and in ceremonial occasions. The second phase of the procedure dealt with a discussion with the local women about the ingredients and cooking methods. The third phase is to document the plant species which are used in the culinary system.

Rice is the staple food of the tribe. They use a special type of locally available sticky rice variety. Khao saim, Khao pa khi, Khao chao, and Khao bao are local varieties. Due to the sticky nature of the paddy, they can prepare their most significant food item - "Khao ho" (Tupula bhat). According to the cultivars, the germplasm of a special sticky variety of rice has been carried with their forefather in the past. The rice items are of 6 types viz. Khao Ho, Khao tek, Khao heing, Khao lam, Khao Pong, and Paing. Paing are of 9 types and mostly prepared during festive times.

Fish items are recognized as the most favorable dish among Tai Phake people as they are generally residing in riverbanks. There are eight main fish items viz. (1) Pa soum, (2) Pa nau, (3) Pa tek, (4) Pa sa, (5) Pa ping, (6) Pa mak, (7) Pa em, and (8) Pa lam. Among all the fish items, Pa Saom is the most important item. It is mandatory to prepare this item in marriage ceremonies and other socio-cultural activities like the name-giving ceremony of a newborn baby. They have a few items on meat such as (1) Nau haing, (2) Nau lam, (3) Nau nung, and (4) Nau soum. The people often consume boiled vegetable dishes. They seldom use oil in cooking. (1) Pakat soum, (2) Phak phan, (3) Phak tun, (4) Pa pok soum, (5) Pa man soum are common vegetable items. (6) Pi koi hoong is a delicious vegetable soup made from banana flower with the tender stem of cane and rhizome of arum (*Colocasia* sp.) added with their special spice which turns the soup into a unique taste. (7) Tho Keu Khum Phat Tum is a common paste item (chutney) prepared from groundnut and tender leaves of *Bischofia javanica* plant and (8) Phak Pa Kut is another delicious item made from tender leaves of fern and a few drops of lemon juice in addition to small pieces of onion and ginger and salt to taste. Bamboo shoot is preserved in 3 different ways, as a wet item (Na sum), as a dry item (Na heu), and as a sliced item (Na je). From these preserved items, they often use it in several fish, meat, and vegetable dishes.

The second phase of the procedure dealt with a discussion of the traditional foods and their ingredients, cooking methods. In this phase, 16 Phake women were invited to a focus group discussion on cooking methods of traditional food and the ingredients of the items of 3 different villages. The ingredients of the items and the methods of cooking were then recorded to present the standard and delicious recipes of the Tai Phake.

The third phase is to document the plant species which were used in the culinary system. Most of the ingredients were collected from their own kitchen garden where they conserve the essential plant resources, while some were gathered from the nearby forest and a few were bought from the local market. Noteworthy each and every household preserves at least one spice plant, mainly *Im phim* (*Ocimum basilicum*), in their own homestead garden.

2. Results and Discussion

The result and discussion of the work have been represented by elaborating the methods of preparation of Tai Phake traditional foods. The information was noted from a group discussion with 16 Phake women in 3 villages viz. Namphake, Borphake, and Phaneng. In each discussion and demonstration, it was observed that the methods to prepare some significant traditional dishes are unique. They utilize different utensils for preparing different dishes, i.e. they have special-purpose utensils designed to prepare only certain items. One such example is the utensil used for the preparation of the rice item "Khao ho," which is specially made to steam the rice. In the case of the preparation of another most important fish item "Pa Soum," they use natural plant resources such as bamboo and Phrynium. Banana leaves are often used in different items of "Paing." Preparation of vegetable paste (Chutney) is a very common item, and flower eating culture is another important chapter in the traditional food habit of Tai Phake.

2.1 Traditional Foods

Traditionally rice is the staple food of Assam, where 80

2.2 Role of Plants in Traditional Dishes

Plants play a major role in the traditional cuisine of Tai Phake. They usually collect the essential plant species from their own home garden or from the wild habitat. The people often prefer boiled vegetables flavored by local ingredients like aromatic plants as spice. These local spices are generally preserved in homestead gardens; some are collected from the forest. Common aromatic spices are *Zanthoxylum armatum* DC (Makat), *Ocimum basilicum* Linn. (*Im phim*), *Persicaria hydropiper* (*Ma phai hom*), *Neurocalyx calcinus* Rob. (*Lom hom*), etc. Different parts of required plants are used in different items. The flower of banana (*Musa paradisiaca*) and young shoots of *Calamus viminalis* are used to prepare the most delicious soup items.

2.2.1 Traditional Rice Items

1. **Khao ho (Tupula Bhat):** This is the unique dish of rice of the Tai people prepared by some local varieties of sticky rice (*Oryza sativa*). In the preparation of this item, the sticky rice at first is soaked in water for a whole night and then steamed in a special type of utensil, which contains two pots of different sizes and are placed one above another. The bigger one is filled with water and put fire under it, and the smaller one contains wet

rice and the pot is tightly closed with a lid. The bottom of the upper pot is separated by a natural net of *Luffa cylindrica* so that the steam of the lower pot is passed through. One wet cloth is tightly wrapped around the join of both pots. The steamed rice is then spread on a broad tray made up of bamboo to remove the vapor and becomes dry. Dried rice can be preserved for a few days. Cooked rice is taken by both hands with *Tong chin* (*Phrynium pubenerve*) leaves and tightly pressed to shape it like a ball. The rice ball is then wrapped with *Phrynium* leaf and ready for consumption.

2. **Khao tek:** This item is prepared by puffed rice (*Akhoi*) and molasses (*Saccharum officinarum*). When molasses are boiled with water, it becomes sticky, and *Akhois* are mixed with the liquid of molasses and made into sweet balls. *Khao tek* is an essential item for their most important annual festival *Poi sang Ken*.
3. **Khao Lam (Bamboo tube rice):** Wet sticky rice is steamed in a bamboo tube. Bamboo (*Bambusa polymorpha* Linn.) is used to prepare this item. Rice is filled half of the tube then water poured up to 3/4 of the tube. The mouth of the tube is plugged tightly by banana leaf (*Musa paradisiaca*) and put it on fire.
4. **Khao haing:** The waste rice of the previous day, which is unfit for consumption, is kept in sunlight for complete drying, then it is used as a light meal.
5. **Khao pong:** Local name is *Murhi*. It is one kind of puffed rice item taken in breakfast.
6. **Paing:** *Paings* are the rice cake (*Pitha*). They prepare 11 types of *paing*.

2.2.2 Preparation of Fish Items

1. **Pa soum (Soured fish):** This item is the most prestigious food item of Tai Phake people, which is inevitable on special occasions, particularly in marriage ceremonies. Raw fish, cooked rice, and a small quantity of salt are mixed thoroughly with the help of *chak* and put the mixture in a bamboo basket, where the inner side is covered with *Phrynium* leaf and left for 5-6 days in an airtight condition. When fish becomes soured, the fish will remain fresh in this condition for a long duration and it is ready for cooking when required. The preparation of *Pa soum* is purely a preservation technique through which raw fish can be retained as fresh for several months. By this process, they can stock a large amount of fish for marriage ceremonies or other activities.
2. **Pa tek:** It is another preparation of fish item. The Phake use it to preserve the fish for future consumption. Fishes are kept in a bamboo container by adding salt and turmeric powder. The lid of the container is tightly closed and preserved for one or two weeks only.

Sl. No.	Food item	No. of Plants	plants required
1	Khao ho	3	<i>Phrynium pubenerve</i> , <i>Oryza sativa</i> , <i>Luffa cylindrica</i>
2	Khao tek	2	<i>Oryza sativa</i> , <i>Saccharum officinarum</i>
3	Khao lam	3	<i>Oryza sativa</i> , <i>Bambusa tulda</i> , <i>Musa paradistica</i>
4	Khao haing	1	<i>Oryza sativa</i>
5	Paing		
i	Paing nung	2	<i>Oryza sativa</i> , <i>Musa champa</i>
ii	Paing tup khup	3	<i>O. sativa</i> , <i>Cocos nucifera</i> , <i>Saccharum</i>
iii	Paing cheng	2	<i>O. sativa</i> , <i>Brassica campestris</i>
iv	Paing pok	3	<i>O. sativa</i> , <i>Zingiber officinales</i> , <i>sesamum</i>
v	Paing lam	2	<i>O. sativa</i> , <i>Bambusa tulda</i>
vi	Paingchen	2	<i>O. sativa</i> , <i>Sacchrum officinerum</i>
vii	Paing rem	1	<i>Oryza sativa</i>
viii	Paing tun	1	<i>Oryza sativa</i>
ix	Paing mak lang	2	<i>O. sativa</i> , <i>Artocarpus heterophyllus</i>
x	Khau nan pa	4	<i>Oryza sativa</i> , <i>Glycin max</i> , <i>cicer</i> , <i>phaseolus</i>
xi	Tong tap	1	<i>Oryza sativa</i>

- Pa sa (a kind of soup):** For this preparation, Rahu or Bahu fish is more suitable, and the added ingredients are garlic (*Allium sativum*), onion (*Allium cepa*), coriander leaves, and their traditional spice Makat. First, the fish is grilled and then chopped into small pieces and mixed with the spices. To prepare the soup, leaves of *Urimum javanica* (Bischofia javanica) is squeezed to extract the juice and mixed with the fish and ready for consumption.
- Pa mok:** This is another delicious item of fish. The spice herbs are mixed with fish and made into small balls. These balls are put into boiling water for some time and then ready to eat.
- Pa ping (Roasted fish):** They use to grill the fish after garnishing with indigenous spices like Im Phim (*Ocimum basilicum*), Makat, etc.
- Pa em:** Here the fish is wrapped with Kau (*Phrynium pubenerve*) leaves and grilled over very low flame and mixed with spices herbs to eat.
- Pa lam:** Chopped fishes are filled in a bamboo tube and put over the fire. A small amount of salt is added to it.

2.2.3 Preparation of Meat Items

- Na soum (Soured meat):** The preparation of this food item is the same as soured fish, so bamboo basket, Kau-pat, and rice are required.

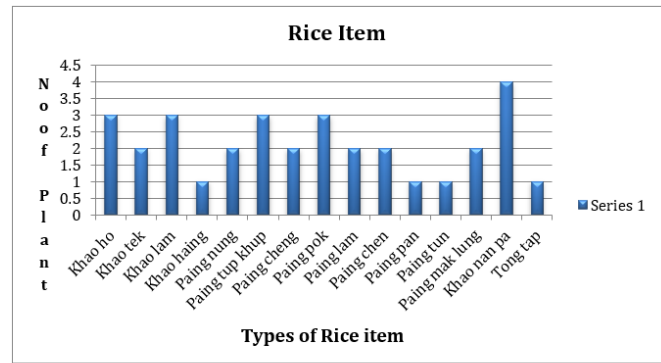


Figure 7. Bar diagram showing the numbers of plants used in different rice item

- Na lam:** Chopped meats are taken in a bamboo tube and put on fire.
- Na haing (Roasted meat):** Grill the small pieces of meat after garnishing with salt and spices.

2.2.4 Vegetable Food Item

- Pakat chum:** Besides these food items, they often prepare another sour item of Laisak (*Brassica rugosa* Prain.). The preparation of soured items is a lengthy process and it acts as a preservation process of the food. Large quantities of Phak Kat As. Lai sak is dried under sunlight for one or two days and kept in a bamboo container after thoroughly mixed with boiled rice. The mouth of the container is tightly closed. After seven days, it turns into a soured item and is ready for consumption.
- Phak phan:** The long-podded vegetables such as beans, lechera are boiled in water, the excess water is squeezed out and a small amount of salt, coriander leaves is added. With a phan, a fork-like spoon is used to eat, so the name is Phak phan.
- Phak tam:** Phak phan sometimes is crushed and are termed as Phak tam.
- Pi Koi Hoong:** Finely chopped banana inflorescence put into boiling water along with the rhizome of arum (*Colocasia* sp.). After boiled properly then the special spices like Im Phim (*Ocimum basilicum*), Makat (*Zanthoxylum armatum*), etc. are added to it and ready for consumption.

2.2.5 Bamboo Shoot Item

Different items of bamboo shoot are very popular for all the ethnic groups of Assam.

- Na sum:** Graded bamboo shoot was mixed with water and left for a few days to make it sour.
- Na heu:** In this case, bamboo shoot is sliced into pieces and sun-dried for future use.
- Na je:** Bamboo shoot is sliced into small pieces.

Name of the Item	No. of Plants	Name of Plants
Pa soum (soured fish)	4	Bambosa polymorpha, Phyrnum pubenerv, Oryza sativa, Mallotus albus
Pa tek	2	Bambosa polymorpha, Curcuma longa
Pa sa (a kind of soup)	5	Alium sativum, Alium cepa, Coriandrum sativum, Zanthoxyllum armatum, Biscofia javonica
Pa mok	3	Ocimum basillicum, Zanthoxyllum armatum, Polygonum hydrophorum
Pa ping (Roasted fish)	2	Ocimum basillicum, Zanthoxyllum armatum
Pa em	3	Phyrnum pubenerve, Ocimum basillicum, Zanthoxyllum armatum
Pa lam	1	Bambosa polymorpha

Table 1. Fish and meat items and used plants

2.2.6 Plant Conservation

Phake people live closely with the forest. They also preserve different types of wild plant species. Some are used to prepare different items and the rest are used as vegetable dishes. They prefer Phyrnium pubenerve (Tong chin), Bambosa tulda (Bamboo), Colocasia sp. (Arum), Rauwolfia serpentina (Mella). Each and every household preserves at least one spice plant mainly Im phim (Ocimum basilicum). There is no legal land tenure system and the people have occupied land and started agriculture on it.

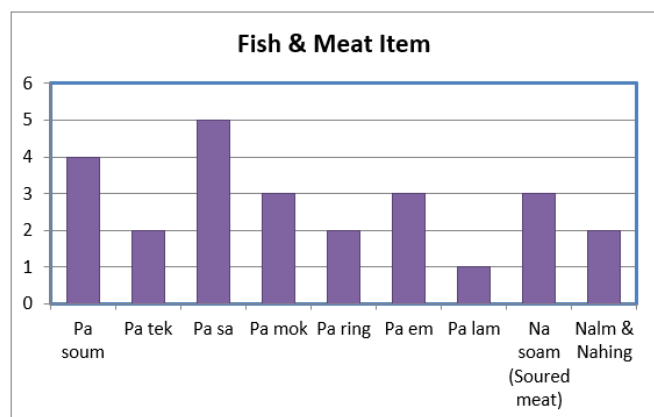


Figure 4. Diagram showing number of plants used in fish and meat items

3. Conclusion

The present research is a pioneer attempt to study and document the significant plant resources used by the indigenous people of Tai Phake in their traditional food items. Their traditional cuisine, especially the rice items, fish, and meat items, are unique and are not found in any other community of Assam. It is highly recommended that the government should intervene and take action to record and conserve their traditional culinary items. Indigenous people like the Tai Phake are generally the custodians of a large amount of germplasm of primitive paddy and other crops which are rare and are on the verge of extinction.

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Fig.3. Special utensil to steam wet rice



Fig. 4 at the bottom, the net of *Luffa cylindrica*



Fig. 5 Rice made into ball



Fig.6 wrapped with *Kou* leave



Fig 7 rice and salt mixed with fish



Fig 8. Ready to put into the basket



Fig 9 Packed for preservation



Fig.10 Phak tam



Fig.11 *Ocimum basilicum*(*Im Phim*)



Fig.12 Flower of *Smilax macrophylla*



Fig. 13 *Bischofia javanica* Bl



Fig. 14 Flower of *Sarchochlmys pulcherima*



Fig. 15 *Pi Koi Hoong* with *Im phim*



Fig. 16 Vegetable soup