

Traditional Edible Insects in the Monsang Tribe's Diet: Insights from Manipur, India

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Abstract:

Edible insects have historically played a crucial role in providing food and nutrition for humans. Globally, thousands of insect species are consumed. The Monsang tribe, one of the Naga tribes primarily residing in Chandel district of Manipur, India, possess a distinctive culture and food preferences. This study aims to identify the variety of edible insects consumed by the Monsang tribe. Through purposive sampling, 150 subjects were selected for structured interviews to gather information. Thirteen species of edible insects were identified, including the carpenter worm (Cossus), wild bee hornet (Vespa mandarinia), and golden silk orb-weaver spider (Trichonephila clavipes), among others. The availability of these insects was found to be seasonal. Preparation methods varied and included roasting, steaming, and frying. The consumption of these insects was found to form a significant part of their diet, suggesting their potential as important ingredients for food and nutritional security.

Keywords: Monsang tribe, Manipur, edible insects, food, nutrition

Introduction:

In tropical and subtropical regions, the traditional practice of consuming insects as food is widespread, providing substantial nutritional, economic, and ecological benefits to rural communities. Among these communities is the Monsang tribe, one of the Naga tribes of Manipur, predominantly residing in Monsang Pantha (Chowdhury et al., 2015), with additional settlements in Japhou, Liwa Sarei, Liwa Khullen, Changnhe, and Liwachangning within the Chandel district of Manipur, India. The Census of India 2011 (Chandramouli, 2011) notes the presence of only 2,427 Monsang speakers, indicating the tribe's small population size.

The Monsang tribe practices jhum agriculture, a traditional form of shifting cultivation, alongside the cultivation of fruit-bearing trees such as guava, mango, and banana in their home gardens (Monsang and Kumar, 2020). They possess a unique cultural identity and specific dietary practices. Despite the extensive research into their history, culture, and traditions, the dietary habits of the Monsang, particularly their consumption of edible insects, have not been thoroughly studied. This present research seeks to fill this gap by exploring and documenting the Monsang tribe's traditional food diversity, particularly focusing on their insect consumption. Given the scarcity of written records and the risk of losing this traditional knowledge, it is imperative to undertake this study. By preserving the culinary heritage and food practices of the Monsang tribe, this research contributes to the broader understanding of indigenous food systems and their role in promoting sustainability and resilience in rural communities.

Literature Review:

Insects have long been utilized as a food source across various cultures, especially in tropical and subtropical regions. This practice offers substantial nutritional, economic, and ecological benefits to rural communities, where insects are a rich source of protein, fats, and micronutrients such as vitamins and minerals (Van Huis et al., 2013). Furthermore, the sustainable harvesting of insects can play a role in conserving local biodiversity and ecosystems (Rumpold & Schlüter, 2013). Despite the broad use of insects as food, there remains a relative scarcity of comprehensive research on this practice within specific indigenous communities, including the Monsang tribe of Manipur, India. While other tribes in the region have been studied regarding their edible insect consumption (Chowdhury et al., 2015), the Monsang tribe's specific practices and preferences have received less attention. This gap is particularly concerning given the tribe's small population and the potential for the loss of traditional knowledge.

Previous research has highlighted the cultural and culinary significance of insects in other indigenous communities, showing that insect consumption is not only a means of nutrition but also a part of their identity and heritage (Yen, 2015). For instance, Okia (2017) found that in Uganda, insect consumption is closely linked to cultural beliefs and has a

long history of traditional use. Additionally, Rahman et al. (2016) noted the importance of insects as a food source in Bangladesh, contributing to nutritional diversity and cultural heritage. Documenting the Monsang tribe's dietary habits, particularly their use of edible insects, is essential for preserving their cultural heritage and understanding their connection to the environment. Exploring the consumption of edible insects by the Monsang tribe could also contribute valuable insights into sustainable food practices, supporting efforts toward food security and ecological balance in the region. Moreover, as traditional agricultural and dietary practices face pressures from modernization and globalization, documenting and understanding the Monsang tribe's food practices is increasingly important to maintain their cultural heritage and biodiversity (Monsang & Kumar, 2020). By filling the knowledge gap regarding the Monsang tribe's consumption of edible insects, this research can offer a deeper understanding of their cultural traditions and inform future efforts to preserve and promote sustainable practices in the region. Furthermore, as documented by Shelley et al. (2018), the preservation of traditional food practices can provide valuable resources for developing sustainable diets and food systems for the future.

Methods and Materials:

The study was conducted in six villages in the Chandel district of Manipur, including Monsang Pantha, Japhou, Liwa Sarei, Liwa Khullen, Changnhe, and Liwachangning. Village leaders were approached to secure consent for the study, which involved participants signing a consent form prior to participation. A purposive sampling technique was used to select 150 participants, aged 25 and older, with extensive knowledge of traditional foods and active involvement in food gathering from the forest. The sample included 100 males and 50 females, as males were found to be more engaged in forest food and insect collection due to their industriousness and enthusiasm. A structured interview schedule was designed and pre-tested to collect data relevant to the study's objectives.

Results and Discussion:

Edible insects have been part of the Monsang diet since ancient times and play a role in shaping their cultural identity. Table - 1 provides a list of edible insects consumed by the Monsang people. The study found that thirteen different types of edible insects were consumed as food among the participants. Preparation methods included roasting, steaming, and frying. The bill bug (Kungku) was consumed both raw and fried.

Cricket (Grylloidea): Crickets, known locally as Khungbeh, were consumed by the study participants during June and July. They were collected as adults, fried, and considered a delicacy. The study also found that roasted crickets were used as traditional medicine for treating cough. Insects such as crickets provide higher energy content compared to seeds or other plant-based foods (Charles and Johnson, 2005).

Bush Cricket (Tettigoniidae): Bush crickets, called Khicho locally, were collected in October. They were typically gathered at night using a light source, making them easier to catch when the light hits their eyes. Adult bush crickets were fried and consumed. In East Africa, Tettigoniidae is a widely consumed insect (Opoke et al., 2019).

Locust (Locusta migratoria): Locusts, locally known as Khiser, were collected during the harvest season from October to November in the study area. They came in different colors such as green, ash, and light brown. Adults were either fried or steamed. Fried locusts were consumed as they were, while steamed locusts were made into chutney with mashed chili, roasted ngari (fermented fish), garlic, salt, and local herbs. Fried locusts were found to be crispy, while steamed locust chutney was creamy and had a rich mouthfeel due to their high fat content. Nutritionally, locusts are as rich or richer than conventional meat and contain omega-3 and omega-6 fatty acids and other sterols that are crucial for preventing heart disease (Egonyu et al., 2021).

Spider-Golden Silk Orb-Weavers (Trichonephila clavipes): Golden Silk Orb-Weavers, known locally as Raangvumpa, were found creating webs at the edges of woods between tree branches or on shrubs. Adults were collected in November and December, with their webs removed before being fried. Consumption of the Giant Golden Orb-weaving Spider by the Rabha tribal was noted in Kamrup, Assam, and Khasi and Bhoi tribes in Meghalaya (Ranade, 2021).

Mantis (Mantis religiosa): Mantis, called Usum locally, was collected during the harvest seasons of September and October. They were found in various colors, including green and light brown. Both the eggs and adults of Usum were fried and consumed. Mantis has been eaten by ethnic tribes in the Baksa District of Assam, India (Das, 2019).

Termite (Isoptera): Termites, known locally as Pheluwm, were collected in September and October. These winged reproductive termites emerged from the ground after rain when the sun came out. They were collected, their wings were removed, and then they were fried for consumption. Termites are commonly eaten in Meghalaya and parts of Assam (Chowdhury et al., 2015).

Ujungtin (unidentified woodworm): Ujungtin, locally known as Tangkhong, was collected in September and October. These insects were found in oak trees, mainly consumed in the larvae stage. Tangkhong can be roasted, fried, and steamed. When fried or roasted, it is crunchy; when steamed, it becomes creamy due to its high-fat content. The study noted that Tangkhong consumption did not serve a medicinal purpose but could cause allergic reactions in some people.

River Sting Bug: River sting bugs, known locally as Thaambu, were found living under stones along riverbanks. They were reported to have a distinct smell and flavor. Adults were collected in March and April, primarily handpicked during the day. They were found to have medicinal purposes, such as preventing nasal congestion due to their distinct smell. Thaambu can be fried and steamed to make chutney, and they are mixed with mashed garlic, chili, ginger, fresh turmeric, and salt for a flavorful side dish. In Arunachal Pradesh (a Northeastern state of India), consuming stink bugs found in riverbeds is a common practice (Hibu, 2022).

Carpenter Worm (Cossus): Carpenter Worm, known locally as Sarki, was consumed during its larval stages. Collected in June and July, it was found in chopped pine trees. The larvae were rich in fat and creamy in texture when eaten. Sarki was fried and steamed for consumption and is a popular delicacy among the indigenous population of Nagaland state in India (Aochen et al., 2020).

Bill Bug (Sphenophorus parvulus): Bill Bug, known locally as Kuwngku, comes from the larvae stage (Sarki) and was available in June and July. Collected from pine trees, it was most abundant after rainfall. The hard wings and legs of adult Kuwngku were removed, then washed and fried. The insects were also eaten raw by some subjects. They were found to be creamy and crunchy due to their hard body and high-fat content.

Wild Bee Hornet (Vespa mandarinia): Wild Bee Hornet, known locally as Khiiphuw, was harvested from the ground using smoke to drive the insects out of their holes. All stages—larvae, pupae, and adults—of wild bee hornet were consumed. They were boiled for five to ten minutes and eaten as chutney mixed with spices such as mashed garlic, coriander, chili, ngari (fermented fish), ginger, and salt. Hornets are an important edible insect, with larvae, pupae, and adults fried or cooked with local spices as an alternative to conventional meat sources (Mozhui et al., 2020).

Grasshopper (Caelifera): Grasshoppers, known locally as Khirung (male grasshopper) and Tangmenrhe (female grasshopper), varied in size, with female grasshoppers appearing larger than males. Adults were collected from March to October and prepared by roasting, steaming, or frying. The study found that grasshoppers could not be consumed by children due to a high risk of allergies, and many adults also reported allergic reactions.

Conclusion:

The study provides an in-depth examination of the edible insects consumed by the Monsang people, highlighting their role in shaping cultural identity and culinary traditions. The research identifies thirteen different types of insects consumed as part of the Monsang diet, prepared using various methods such as roasting, steaming, and frying. Insects such as crickets, bush crickets, locusts, and wild bee hornets offer valuable nutritional benefits, including high energy content and essential fatty acids, which can rival or surpass traditional meat sources. The study also notes the medicinal uses of certain insects, such as crickets for cough relief and river sting bugs for preventing nasal congestion. While edible insects provide numerous advantages, the study highlights potential health concerns associated with consuming certain insects, such as allergies observed in children and some adults. It is essential to balance the cultural and nutritional benefits of edible insects with potential health risks. This research contributes to the broader understanding of the dietary practices and traditional knowledge of the Monsang people and it emphasizes the importance of preserving and promoting this cultural heritage while ensuring safe and sustainable practices. Further research on the potential health benefits and risks of insect consumption is recommended for a comprehensive understanding of this traditional diet.

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Table-1: Edible Insects Used Foods Resources

Name	Local term	Scientific name	Seasonality	Stage of consumption	Mode of consumption
Cricket	Khungbeh	Grylloidea	June – July	Adult	Fry
Bush cricket	Khicho	Tettigoniidae	October	Adult	Fry
Locust	Khiser	Locusta migratoria	Oct – Nov	Adult	Fry, steam
Spider-golden silk orb-weavers	Raangvumpa	Trichonephila clavipes	Nov – Dec	Adult	Fry
Mantis	Usum	Mantis religiosa	Sept – oct	Egg, adult	Fry, steam
Termite	Pheluwum	Isoptera	Sept – oct	Adult	Fry
Ujungtin	Tangkhang	Unidentified wood larva	Sept – oct	Larva	Fry, roast
River sting bug	Thaambu	-	Mar – April	Adult	Fry
Carpenter worm	Sarki	(Cossus)	June – July	Larva	Fry
Bill bug	Kuwngku	Sphenophorus parvulus	June – July	Adult	Fry, raw
Wild bee hornet	Khiiphuw	Vespa mandarinia	April – oct	Nymph, adult	Fry, steam
Male grasshopper	Khiring	Caelifera	Mar – oct	Adult	Fry, roast
Female grasshopper	Tangmenrhe	Caelifera	Mar – Oct	Adult	Fry, roast

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