

Indigenous knowledge of traditional processing of *Selroti*, a cereal-based ethnic fermented food of the *Nepalis*

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The *Nepalis* of the Himalayan regions of India, Nepal and Bhutan prepare a cereal-based fermented food, *Selroti* using their indigenous knowledge. The paper documents the traditional knowledge of the ethnic Himalayan people on preparation of *Selroti* and its ethnical importance.

Keywords: Traditional knowledge, *Selroti*, Fermented food, *Nepalis*

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A global interest in rice and its fermented product is increasing due to their calorogenic value, unique quality characteristics and high acceptability¹. In most of the countries, rice is fermented either by using mixed-culture(s) into alcoholic beverages, or by natural fermentation into leavened batter-formed dough breads which are usually baked or steamed². Some of the common cereal-based fermented foods across the world have been extensively studied; these include *masa* of South Africa, *mawé* or *ogi* of Benin, *ben-saalga* of Burkino Faso, *kenkey* of Ghana, *sourdough* of America and Europe, *tarhana* of Turkey, etc³⁻⁸. The well-documented Indian cereal-based non-alcoholic fermented foods are *idli*, *dosa*, *jalebies*, and Indian cereal-based alcoholic beverages are *bhaati jaanr* and *kodo ko jaanr*⁹⁻¹⁴. Ethnic fermented food is a distinct food culture of the *Nepalis* living in the Himalayan regions of India, Nepal and Bhutan¹⁵. Depending on the agro-climatic conditions, various types of cereals crops such as rice (*Oryza sativa* L.), maize (*Zea mays* L.), finger millet (*Eleusine coracana* Gaertn.), wheat (*Triticum aestivum* L.), barley (*Hordeum vulgare* L.) and buckwheat (*Fagopyrum esculentum* Moench.) are cultivated and eaten as staple food items by the *Nepalis* in the Himalayas. To the best of our knowledge, traditional processing and product characterisation of *Selroti* has not been documented. The aim of the paper is to record the indigenous

knowledge of the ethnic people of the Himalayas on production of cereal-based fermented food, *Selroti*.

Methodology

Survey was conducted in randomly selected 214 households in villages located in Sikkim, representing the major ethnic *Nepalis*, and other tribes, the *Bhutias* and the *Lepchas*. Information was collected on consumption of *Selroti* using questionnaire. Amount of *Selroti* consumed in every meal by each person was weighed directly and daily per capita consumption was estimated as gm/capita/day. Indigenous knowledge on traditional processing of *Selroti* batters, its mode of consumption and ethnical importance of the product was documented based on the information sought from the local people of the respective places.

Results

Data on acquiring of *Selroti* from home-made or market purchase, annual production and per capita consumption of *Selroti* by ethnic groups in Sikkim were calculated. *Selroti* is prepared at home (75.6%) comparable to market purchase (14.3%). Among the ethnic groups, 89% of *Nepali* prepared *Selroti* followed by the *Lepcha* 6.6% and the *Bhutia* 4.4%, respectively. Per capita consumption of *Selroti* in Sikkim was calculated as 8gm/day. Average annual production of *Selroti* per household in Sikkim was 18.5 kg (data not shown). *Selroti* is a popular fermented rice-based ring shaped, spongy, pretzel-

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like, deep-fried food item commonly consumed in Sikkim and the Darjeeling hills in India, Nepal and Bhutan. It is prepared during religious festivals and special occasions. *Selroti* is a Nepali word for ring-shaped rice-based bread.

During *Selroti* preparation, rice (*Oryza sativa* L.) local variety *athey* is sorted, washed, and soaked in cold water for overnight or 4-8 hrs at ambient temperature. Sometimes, milled rice is also used during *Selroti* preparation. Water is then decanted from the rice by using bamboo made sieve called *chalni* and spread over a woven tray made up of bamboo, locally called *naanglo* and dried for 1 hour. Soaked rice is pounded into coarse powder in a wooden mortar and pestle known as *okhali* and *mushli*, respectively (Fig. 1). Larger particles of pounded rice flour are separated from the rest by winnowing in a bamboo tray. Then, the rice flour is mixed with nearly 25% refined wheat (*Triticum aestivum* L.) flour, 25% sugar, 10% butter or fresh cream and 2.5% spices/condiments containing large cardamom (*Amomum subulatum* Roxb.), cloves (*Syzygium aromaticum* Merr.), coconut (*Cocos nucifera* L.), fennel (*Foeniculum vulgare* Mill.), nutmeg (*Myristica fragrans* Houtt.), cinnamon (*Cinnamomum zeylanicum* Bl.), and small cardamom (*Elletaria cardamomum* Maton.) are added to the rice flour and mixed thoroughly. Some people add tablespoon full of honey or unripe banana or baking powder (sodium bicarbonate) to the mixture, depending on quantity of the mixture. Milk (boiled/unboiled) or water is added, kneaded into a soft dough and finally into batter with easy flow. Batter is left to ferment (Fig. 2) naturally at ambient temperature (20-28°C) for 2-4 hrs during summer and at 10-18°C for 6-8 hrs during winter (Fig. 2). The oil is heated in a cast-iron frying pan locally called *tawa*. The fermented batter is squeezed by hand or *daaru* (metallic serving spoon), deposited as continuous ring onto hot edible oil (Fig. 3) and fried until golden

brown and is drained out from hot oil by poker locally called *jheer* or *suiro* or also by a spatula locally called *jharna*. Deep-fried *Selroti* is served as confectionery (Fig. 4).

The following traditional equipments are used during preparation of *Selroti* as documented during survey. *Okhali* and *mushli*- It is a pair of wooden mortar and pestle, respectively used to pound soaked rice. *Naanglo*- It is a bamboo stripes woven tray used to dry soaked rice. *Chalni*- It is a sieve either made up of metal wire or bamboo stripes. Sieve made up of bamboo has bigger holes to drain water from soaked rice. Sieve made up of metal wire is finely woven and is used to sieve pounded rice. *Suiro*- It is a pointed bamboo stick used to turn *Selroti* upside down, lift, and drain oil and to take out the fried *Selroti*. *Jheer*- It is a poker made up of metal wire to drain out the deep-fried *Selroti* from hot oil. *Daaru*- It is a metallic serving spoon used to pour batter onto the hot edible oil. *Tawa*- It is a cast-iron frying pan used to fry *Selroti*. *Jharna*- it is a metal spatula and has a wide flat blade with holes. It is used to drain oil from the fried *Selroti*. *Thumsey*- It is a bamboo-made basket use to store freshly fried *Selroti*.

Selroti is served as confectionary bread with *aalu dam* (boiled potato curry), *simi ko acchar* (pickle prepared from string beans) and meat. It can be served hot or cold. *Selroti* can be stored at room temperature for two weeks. The preparation of *Selroti* is an art of technology and is a family secret passed from mother to daughter. Women prepare it and men help them in pounding the soaked rice. Survey result indicated that *Selroti* is mostly prepared at home. Some people are economically dependent upon this product. Since the time immemorial *Selroti* is known as a ceremonial food in Sikkim, the Darjeeling hills, Nepal and Bhutan (Figs 5-7). It marks a special occasion of the *Nepalis* such as marriage, religious and cultural festivals. Ethnical importance of *Selroti* was documented during survey and noted.



Fig. 1 Rice pounded in *Okhali*



Fig. 2 Batter fermentation



Fig. 3 *Selroti* being deep-fried



Fig. 4 Deep-fried *Selroti*

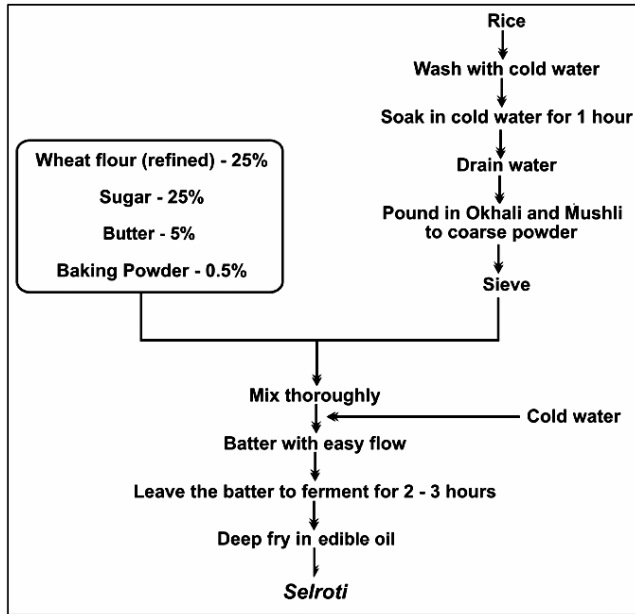


Fig. 5—Traditional method of *selroti* preparation in South Sikkim & Nepal.

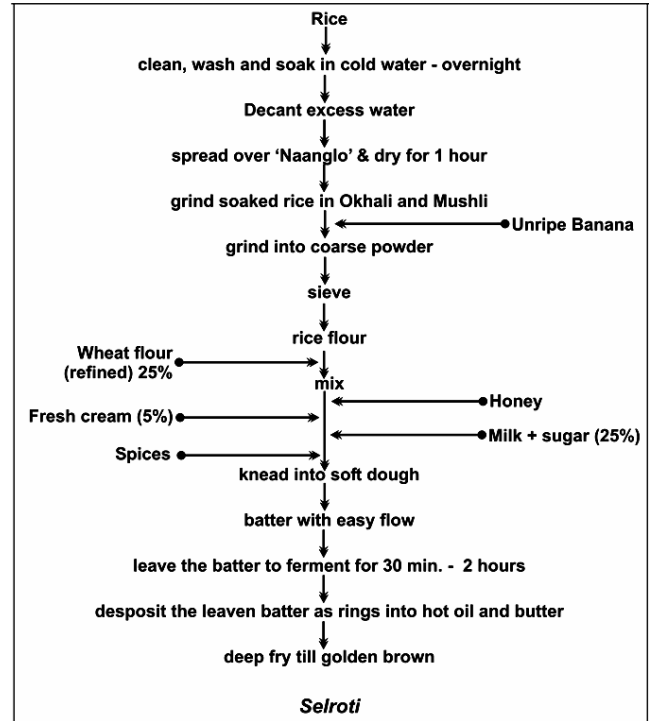


Fig. 7—Traditional method of *selroti* preparation in Darjeeling hills

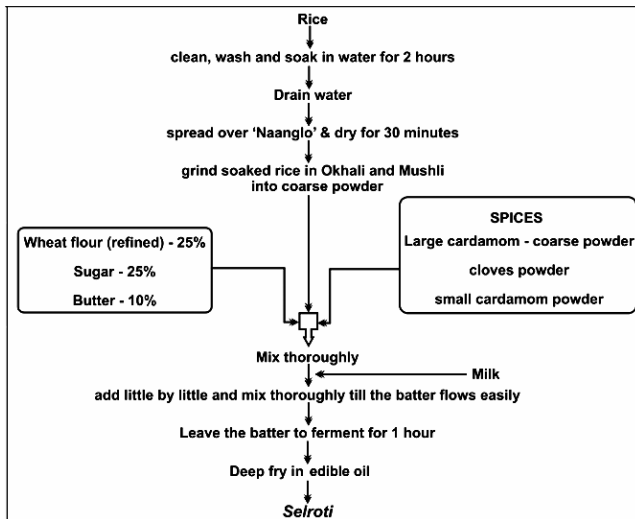


Fig. 6—Traditional method of *selroti* preparation in East Sikkim

Discussion

Information on indigenous knowledge and antiquity of *Selroti* was sought from village elders and older women during survey. *Roti* is a *Nepali* word for bread. Out of many kinds of bread, the *Nepalis* consume, two of them have a special place in the society. One is *Babari* and the other is *Selroti*. *Babari* is round, solid pancake, whereas *Selroti* is ring shaped pretzel-like bread. Both are prepared from grounded rice flour. It was recorded during interview that in

olden days only *Babari* was prepared and consumed by the people instead of *Selroti*. Since, the consumers found it difficult to fry in a pan, especially to turn it upside down; they started making rings with the batter. And to turn this ring-shaped bread, they started using a poker locally called *suiro* (a pointed bamboo stick). Anything lifted with a *suiro* is called *saela* in the *Nepali* language. Probably, the word *Selroti* might have derived from the word *saela*. That is how preparation and consumption of *Babari* among the *Nepalis* was slowly replaced by *Selroti* preparation, which has become a distinct food culture of the *Nepalis*. There is a hypothesis on the nomenclature of *Selroti*. The word *seli* is a name for local variety of rice cultivated in foot hills of Nepal. The product prepared from *seli* variety of rice might have been called as *Selroti*. In *Nepali*, the word *saal* means a year. Since *Selroti* is prepared during *Tiwar*, one of the main festivals of the *Nepalis*, which is celebrated once in a year. People believe that the word *Selroti* has originated from the word *saal* meaning confectionary bread prepared during festival once in a year. The antiquity of *Selroti* remains a myth; no historical documents were available on this product. Documentation of ethnical information on antiquity of *Selroti* during survey

will provide vital information on the history and food culture of the *Nepalis*. In olden days, *Selroti* preparation did not include the use of spices or condiments but now-a-days, because of the development of diversified taste, people prefer to add spices during preparation.

Selroti has an ethnic importance among the *Nepalis*. It is served during marriage ceremony of various castes of the *Nepalis* along with other traditional food items. It is a customary to hand over a basket full of freshly fried *Selroti* to bride's parents by the groom during marriage among the *Nepalis*. This is probably to supplement the sweet-dish, which is traditionally uncommon among the *Nepalis*, for greetings. Traditionally, newly married *Nepali* bride visits her parent's house once in a year. When she returns back to her husband's house she should carry a *thumsey* (local name for bamboo basket) contain freshly fried-*Selroti*. This traditional is known as *Pani Roti* in *Nepali*. *Selroti* is traditionally served along with other traditional food items during *Bhai Tika*, a Hindu festival of the *Nepalis*, which is observed to honour the brothers by their sisters. Beside this, it is also served during other festivals of the *Nepalis* like *chaitay dasai*, *maghay sakranti*, *bara dasai*, etc. Fried *Selroti* products can be preserved for about 10-15 days without refrigeration and consumed as it is or slightly warmed up. People might have invented such preservation technique to feed themselves while traveling. Carrying fried *Selroti* is a traditional practice among *Nepalis* while traveling for long distances.

Conclusion

Selroti is an important fermented rice food of the *Nepalis*. Per capita consumption of *Selroti* in Sikkim is 8 gm/day. Indigenous knowledge of the Himalayan people on production of *Selroti* justifies their skill and expertise for building up a global approach of ethnic foods.

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