

Bakhar starch fermentation – A common tribal practice in Orissa

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Ethnobotanical studies were conducted among various tribes in different tribal districts of Orissa. It has been found that 6 plant species are used by the tribal people for preparation of *Bakhar*, which is generally used for the fermentation of rice. They were further used to prepare the drink, *Handia*. The uses of these 6 plant species are recorded for the first time.

Keywords: Ethnobotany, *Bakhar*, *Handia*, Rice fermented drink, Starch fermented drink, Fermentation, Orissa

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A major part of the population of Orissa lives in the rural areas and a considerable proportion of them are tribals residing in the interior forests. A lot of ethnobotanical information remains unnoticed and undocumented due to lack of communication. The different traditions, needs, culture of various tribes and the diversified flora richly contribute to the tribal plant folklore. Orissa is the third largest tribal populated state of the country with more than 8 million tribal people^{1,2}. The total schedule tribes population is 22.1% of the total population of the state and 9.65% at national context. There are about 62 different ethnic tribes in Orissa. Some of the tribes are, *Santhal*, *Sabar*, *Bhumij* in Mayurbhanja district; *Paroja*, *Kondh*, *Kolh* in Kalahandi district; *Bhuinya*, *Mundari*, *Juang* in Keonjhar district; *Gond*, *Bhuyan*, *Bhatoda*, *Gadaba*, *Paroja* in Koraput district; *Bonda*, *Saura*, *Koya*, *Didayi* in Malkangiri district; and *Santhal*, *Kondh*, *Kolha* in Dhenkanal district³⁻⁸. They are largely confined to forest areas and possess rich empiric knowledge about plant wealth. During field surveys in several forest pockets of Orissa, information was collected regarding the use of plants for food, drinks, beverages and medicines. Tribals are using several plant parts as their daily diet and medicine. Preparation of traditional preparation of beverages using *Bakhar* pellets by the tribal people

was noticed. *Bakhar* is a mixture of different plant ingredients, which is used in fermentation of boiled rice to prepare beverages. Locally, the fermented rice called *Handia* is prepared by the tribal people in traditional way. The drink has become customary as the tribals celebrate all the festive occasions and social ceremonies as a part of their life in the society by part taking this drink. Greater efforts are required to document the traditional knowledge of these ethnic tribes, before it is lost forever. The information provided on *Bakhar* is found to be interesting compared with available literature sources⁹⁻¹⁴. An attempt was made for the first time to document the traditional preparation of *Bakhar*, which plays a key role in fermenting starch.

Methodology

Ethnobotanical explorations were undertaken in different tribal districts of Orissa during 2003-2006. Tribal medicine men were interviewed for information from the concerned districts like Mayurbhanj, Keonjhar, Sundergarh, Koraput, Kalahandi, Phulbani, Nabarangpur, Malkangiri, Rayagada, Gajapati, Bolangir and Dhenkanal (Fig. 1). These tribal districts were surveyed through periodical tours, onsite data collection and field observations. The information was confirmed as valid if at least 3 informants had similar comments about the folk medicinal use of a plant. For getting accurate

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information, cross verification was carried out from tribe to tribe. The plants were collected, dried and sample specimens were obtained for preparation of herbarium. Taxonomic identification of the specimens was done using state flora¹⁵. The plant specimens along with tagged vouchers were deposited in the Herbarium of Institute of Minerals and Materials Technology (formerly Regional Research Laboratory), Bhubaneswar.

Results and discussion

Six plant species used by the tribal people for the preparation of *Bakhar* are enumerated with botanical name followed by family name, tribal name, vernacular name in Oriya language and the plant parts used by the tribal people (Figs. 2-7). *Bakhar* is a compound formulation of 6 ingredients of plant origin. Fresh roots of *Cissampelos pareira* (*Akanbindi*), *Diospyros melanoxylon* (*Kendu*), *Lygodium flexuosum* (fern), *Orthosiphon rubicundus*

(*Chandua*), *Ruellia tuberosa* (*Chaulia*) and bark of *Terminalia alata* (*Asan*) were collected, cleaned and dried. The samples were powdered using grinding stone. Two gm powder was mixed with 200 gm of rice powder adding water. After mulching for 10-15 min, small pellets were made out of it. Those pellets are known as *Bakhar*, popularly used for the preparation of *Handia*, a local beverage generally prepared by the tribal people of Orissa. Approximately, 1-2 Kg of rice is boiled and dried for about 3-4 hrs. After drying, 2-3 *Bakhar* tablets are added to the rice and soaked in water for 2 days. On 3rd day morning, it will be completely fermented and prepared for drinking. The fermented rice (*Handia*) has been used as wine and also as medication for constipation, urinary infections and liver disorders. This is a unique kind of preparation of beverages using plant parts by the tribal people. So, there is an urgent need to conserve their indigenous knowledge.

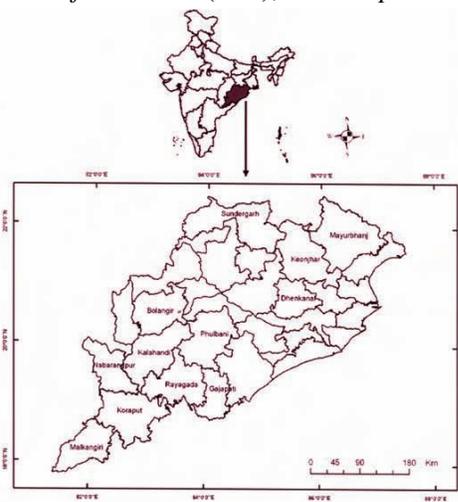


Fig.1 Location map of study area



Fig.2 *Cissampelos pareira*



Fig.3 *Diospyros melanoxylon*



Fig.4 *L. flexuosum* (L.) Sw.



Fig.5 *O. rubicundus*



Fig.6 *R. tuberosa* Linn.



Fig.7 *T. alata* Heyne ex Roth

Conclusion

In the study, it was observed that the tribal people feel relaxed after taking *Handia*, which is prepared from boiled rice. *Handia* drink helps them in uninterrupted sleep by reducing tiredness. A further biological evaluation could provide scientific rationale for their continuing use among the tribal and could lead to the discovery of biologically active novel compounds, which may be helpful for several food processing and beverage industries.

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