

## Research Article

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**Tarun Kumar Basumatary,  
Reena Terangpi, Ramie H.  
Begum**

Department of Life Science &  
Bioinformatics, Assam University,  
Diphu Campus, Diphu, Karbi  
Anglong, Assam 782460, India

**Chandan Brahma, Padmoraj  
Roy, Hankhray Boro**

Department of Biotechnology,  
Bodoland University, Kokrajhar,  
Assam 783370, India

**Hwiyang Narzary, Rista  
Daimary, Birendra Kumar  
Brahma**

Department of Biotechnology,  
Bodoland University, Kokrajhar,  
Assam 783370, India

**Sanjib Brahma, Anuck Islary,  
Sandeep Das**

Department of Biotechnology,  
Bodoland University, Kokrajhar,  
Assam 783370, India

**Subhash Medhi**

Department of Biological Sciences,  
Gauhati University, Guwahati,  
Kamrup, Assam 781014, India

**Shyam Sundar Swargiary, Sujoy  
Bose**

Department of Biotechnology,  
Gauhati University, Guwahati,  
Kamrup, Assam 781014, India

## Correspondence:

**Tarun Kumar Basumatary**  
Department of Life Science &  
Bioinformatics, Assam University,  
Diphu Campus, Diphu, Karbi  
Anglong, Assam 782460, India  
Tel: +91-9954166465  
E-mail: [baztarun@gmail.com](mailto:baztarun@gmail.com)

## *Jou*: the traditional drink of the Boro tribe of Assam and North East India

*Tarun Kumar Basumatary\*, Reena Terangpi, Chandan Brahma, Padmoraj Roy, Hankhray Boro, Hwiyang Narzary, Rista Daimary, Subhash Medhi, Birendra Kumar Brahma, Sanjib Brahma, Anuck Islary, Shyam Sundar Swargiary, Sandeep Das, Ramie H. Begum, Sujoy Bose*

### Abstract

*Jou* is an integral part of the socio-cultural life of the Boros. The Boro has an old age tradition of preparing *Jou* from fermented cooked rice (jumai) with locally prepared yeast cake called *Amao*. *Jou* is traditionally used in marriage, worship and in all social occasions and it is of three kinds *Jou*- bidwi, finai and gwran (distilled alcohol from jumai). *Amao* is traditionally prepared from seven plants species- *Oryza sativa* L., *Scoparia dulcis* L., *Musa paradisiaca*, *Artocarpus heterophyllus* Lamk., *Ananas comosus* (L.) Merr., *Clerodendron infortunatum* L., *Plumbago zeylancia* L. Boro, an ethnic tribe in Kokrajhar district of Assam state, Northeast India is the material of the present study where elderly men and women were exclusively selected for the interview. The research included participatory approach of unstructured and semi-structured interviews and group discussions. The paper describes indigenous methods of preparation of *Amao* and harvesting of *Jou*. The used of different components as distilling unit for obtaining alcohol have also been emphasized. Present study has established *Amao* as a potential source of yeast medium used for fermenting rice and preparing *Jou*. Besides commercial exploitation of these plants as yeast media may be explored and encourage.

**Keywords:** Boro tribe, Plants, *Amao*, *Jou*, Alcohol.

### Introduction

Boro is the single largest tribal community in North East India; they are an ethnic and linguistic community, early settlers of Assam and North East India and belong to a larger ethnic group called the Kacharies.<sup>1, 2, 3</sup> The Boro language is a member of the Tibeto-Burmese family.<sup>4</sup> They practice Bathouism, Hinduism and Christianity; Boro-Kacharis have settled in most areas of North-East India and parts of Nepal. Udalguri and Kokrajhar of Assam are considered the centre of the Boro area. Kokrajhar (89.46' E to 90.38' E longitudes and 26.19" N to 26.54" N latitudes) is one of the twenty-three districts of Assam and head quarter of Bodoland Territorial Council; described as the gateway to the northeastern region of India located on the north bank of the river Brahmaputra dominated by the Boro tribe. It covers a total area of 3,169.22 sq. km.; census of India (2001) puts Boro population as 9,30,404 whereas Brahma et al. puts Boro population as high as 52 lakhs.<sup>5</sup> Weaving is an integral part of Boro tradition. Most women weave their own Dokhna (the traditional dress of the Boro women) and shawls. The Boros are also expert in making handicraft items. Rice is a staple food of the Boros and is often accompanied by a non-vegetarian dish such as fish or pork.

Traditionally Boro people are non-vegetarian.

*Jou* is an integral part of the socio-cultural life of the Boros. In olden days, they used more than 50 plant species for the preparation of *Amao* for brewing *Jou*; but now a days only a few plant species those are commonly available in their vicinity are being used. *Jou* is produced by fermenting cooked rice (jumai) with locally prepared yeast starter culture cake called *Amao*. Jumai prepared without glutinous type of rice is called matta. *Jou* can be obtained in three kinds from jumai these are (a) *Jou- bidwi* (rice beer): prepared mixing jumai and water, then filtered with janta (a conical bamboo sieve) and consumed within a few days, (b) *Jou- finai* (rice beer): this kind of *Jou* is harvested by inserting janta into maldang (earthen pot) along with jumai at early stage of fermentation. In this process *Jou* is first harvested without pouring water called as *Jou matha*; more *Jou* is harvested by adding water into the maldang without disturbing the jumai, these can be longer duration and (c) *Jou- gwran*: alcohol distilled from jumai. *Jou* is traditionally used in marriage, worship and in all social occasion including funeral and death rituals. It is also offered to guests as a mark of honour. Festivals of Boros like Bwishagu (a new year festival), Domasi (harvest festival), Kherai (a ritualistic dance) and other social ceremonies such as birth and marriage etc. cannot be accomplished without these drinks. *Jou* is not only customarily important among Boro tribe, but are also used as refreshing drink where the elders of every household relax by consuming it after doing chores of work. It thus plays a significant role in the socio-cultural and personal life of Boro people.

Literature survey reveals, there are few reports regarding the preparation of starter cake, uses and consumption of alcoholic beverages among various tribes.<sup>6-9</sup> Pharmacological aspects of plant used in the preparation of starter cake for rice beer among the Dimasa tribe (Hills Kacharis) have been reported.<sup>10</sup> Preparation of starter cake for rice beer fermentation and the used of alcoholic beverages among the Boro tribe has been in existence since the days of yore. Traditional alcoholic beverages constitute an integral part of dietary culture and have strong socio-cultural importance among the ethnic people in Boro dominated areas where social activities require provision and consumption of appreciable quantities of alcohol. Keeping in view the above mentioned aspects, we undertook a study on traditional method adopted for the preparation of *Amao* and rice beer by Boro community of Kokrajhar district. The present paper on ethnobotanical

data is based on firsthand knowledge collected during the survey of rural villages in Kokrajhar district.

## Material and Methods

Boro, an ethnic tribe in Kokrajhar district, Northeast India is the material of the present study where elderly men and women were exclusively selected for the interview. A study was undertaken during 2010-2013 to achieve the objective of study and document local knowledge related to preparation of traditional beverages by the Boro tribe of Kokrajhar district. The research included participatory approach of unstructured and semi-structured interviews and group discussions. Informants were first introduced about the objectives of the research and their verbal consent for participation in the study was obtained. Elders of rural areas were requested to share the knowledge on fermentation of rice and other substrate, preparation of yeast culture and plants used in it, distillation of alcohol from rice beer and traditional uses of rice beer and its implication on socio culture of the Boros. We participated in social occasions to have personal observations. Plants used in the preparation were collected from natural habitat (i.e., forest) and identified with the help of available literatures.<sup>11, 12</sup> The plants are processed and made into voucher specimen according to standard form Ref. 13 and deposited in the Department of Biotechnology, Bodoland University, Kokrajhar, Assam, India.<sup>13</sup>

## Result and Discussion

*Amao*, which is used to prepare *Jou*, is a part and parcel of the Boro tribe of Assam. It finds its importance in the socio-cultural life of the folk. A total of seven plants species *Oryza sativa* L., *Scoparia dulcis* L., *Musa paradisiaca*, *Artocarpus heterophyllus* Lamk., *Ananas comosus* L. Merr., *Clerodendron infortunatum* L., *Plumbago zeylancia* L. belonging to 6 genera and 5 families have been used for the preparation of *Amao*. Local name and plant parts used in the preparation of *Amao* for preparation of jumai are given in table 1. During the survey period it has been observed that traditional alcohol brewing is a home based industry and mostly done by the local Boro women using their indigenous knowledge of rice beer fermentation. The local folk depend upon wild resources around them for their needs and thereby possess fairly good knowledge about the plants to be selected that give improved quality of *Jou*. Among all the plants, rice grain is the most important without which the cake cannot be made and undergo fermentation.

### Preparation of *Amao* (Yeast starter cake)

*Amao* is traditionally prepared from plants parts of all selected plants (Table 1) and soaked rice grain (mairong). Parts of the plants to be used are washed properly and allowed to dry for 2-3 hours under the sun. Previously soaked mairong of about 4 kg are then mixed with the dried plant materials and grounded into fine powder using traditional wooden mortar (ual) and pestle (gaihen). The powder is then sieved in a sandri (traditional sieve made of bamboo); a little amount of previously prepared *Amao* which acts as inoculants is mixed with the powder. A little amount of water are added to make a sticky paste and then made into small round flat cake (1 cm in thickness). The cakes are then kept on clean, dry paddy straws spread on a songrai (a round bamboo craft) and again covered with straws. Songrai is kept on a bwisang (rectangular bamboo craft, usually hang over the traditional fire place) for drying. This process continues for a couple of weeks until the *Amao* becomes hard; these are ready to be used in brewing rice beer. *Amao* is reported to be effective upto 5-6 month which is stored in dwihu (small earthen pot) for future use. From 4 kg of rice more than 60 numbers of *Amao* are made.

### Preparation of *Jou*

*Jou* is prepared by fermenting cooked rice (mairong) of glutinous type and adding *Amao*. Cooked mairong is spread on a big songrai covered with clean banana leaves and then allowed to cool gradually. When it cools down, 2/3 nos. of grounded *Amao* is added to it and mixed thoroughly with clean hands. The mixture is then gathered into a round mound, above which 3 chilli (bamblu; *Capsicum annum* L.) and 3-4 pieces of red hot charcoal (hangar) were kept in a triangular form. There is a belief among the folk that such practice protects the preparation from evil spirit and produce good quality *Jou*. The preparation is kept for 18-48 hours covered with banana leaves. In the mean time maldang (earthen pot) where the incubated rice is suppose to be fermented, is sterilized by burning jujai (rice husk) and jigab (straw) and washed thoroughly. This is kept upside down in fire place where jujai is spread over burning firewood for smoking and drying the maldang. When the incubated mixture forms a profuse whitish froth, it is then poured to the sterilized maldang where janta (conical bamboo sieve) is inserted into it for easy harvesting of the rice beer and mouth is

sealed inserting banana leaves and wrapped tightly with a cloth or closed with an earthen plate and stored for fermentation. It requires 3 days for fermentation during summer whereas it generally takes 5-7 days in winter. The preparation is usually kept away from any Citrus plant species or any sour material which is believed to spoil *Jou*. Formation of white or golden yellow froth which smell sweet indicates fermentation of good quality *Jou* which is ready for harvesting.

### Preparation of *Jou gwran* (distilled alcohol)

Jumai becomes ready for distillation after 3-5 days of fermentation. Jumai is then diluted with water in a silver pot and the diluted form is known as afri (fig. 3) and usually kept for 2-3 hours. More concentrated afri gives strong alcohol less in quantity. Distillation of alcohol can be done at the early stage or after harvesting rice beer. The complete process requires two to four hours. Quality of alcohol remains strong when it is distilled without harvesting rice beer and more *Amao* (yeast cake) are added at the early stage of rice beer preparation or mixing jumai with less amount of water. Distillation still (fig. 4) consists of three components- the lower part is a metallic utensil which contain the afri (diluted fermented jumai), the middle part is an earthen pot with perforated base called mwkhakoro (fig. 2); it has another small bowl called a receiver (fig.1) which is placed inside over it and is used to hold the distilled alcohol. Sometimes the mwkhakoro is fitted with a long cylindrical tube, usually a bamboo tube through the nozzle present on its side in order to receive and flow the condensed alcohol directly into a bottle. The upper part is again a metallic utensil, usually a saucer like which actually acts as a condenser, filled with cold water. The gap between these component are sealed with moisten muslin clothes and squeezed jumai or mud to make it sticky which prevents leakage of vapour. On constant heating, the afri in the lower utensil forms vapour, passes through the perforated base of mwkhakoro and reaches the cool base of the condenser. The vapour then strikes on it and forms liquid which falls back on the mwkhakoro and collected in the bowl present over it. When the cold water on the upper condenser becomes hot, it is poured off and again filled with cold water. It is done for two to four times; the more the alcohol is distilled, the lesser the concentration. The jumai after distillation is now called as afri katla. The latter is used as feeds for pigs and is also used as fish attractant while fishing.

**Table 1:** Plant and plant parts used in the preparation of *Amao* (Yeast starter cake)

Family	Family	Local name	Common Name	Parts used	Quantity	Usage
<i>Oryza sativa</i> L.	<i>Poaceae</i>	Mai	Rice	Grains, husk, straw	4 kg	Rice (mairong) as substrate for <i>Amao</i> ; husk to sterilize the earthen pot; straw to cover on <i>songrai</i> and <i>Amao</i> .
<i>Scoparia dulcis</i> L.	<i>Scrophulariaceae</i>	Bongfang rakeb	Sweetbroom; Licoriceweed	Whole twig	10 nos.	As substrate for <i>Amao</i>
<i>Musa paradisiaca</i> L.	<i>Musaceae</i>	Talir	Banana	Leaf	A handful	As substrate for <i>Amao</i> & to cover fermented cooked rice
<i>Artocarpus heterophyllus</i> Lamk.	<i>Moraceae</i>	Kanthal	Jack	Leaves	10 nos.	As substrate for <i>Amao</i>
<i>Ananas comosus</i> (L.) Merr.	<i>Bromeliaceae</i>	Anaras	Pineapple	Bark, leaves	A handful	As substrate for <i>Amao</i>
<i>Clerodendron infortunatum</i> L.	<i>Verbenaceae</i>	Lwkhwna	Hill glory bower	Leaves	3-4 leaves	As substrate for <i>Amao</i>
<i>Plumbago zeylanica</i> L.	<i>Plumbaginaceae</i>	Agwrsita	Ceylon Leadwort or Doctorbush	Bark	25-50 gm.	As substrate for <i>Amao</i>
<i>Capsicum annum</i> L.	<i>Solanaceae</i>	Bamblu	Chilli	Fruits	3 nos.	Place over fermented rice to check evil spirit



Fig. 1



Fig. 2



Fig. 3



Fig. 4



Fig. 5



Fig. 6



Fig. 7



Fig. 8



Fig. 9

**Captions:** Fig. 1: Mwkhakoro; one of the distilling component with small bowl inside to hold alcohol after being condense., Fig. 2: An earthen mwkhrakoro with perforation at the base; a distilling component., Fig. 3: Afri (diluted jumai) in a metallic utensil., Fig. 4: A complete still for *Jou* distillation., Fig. 5: *Artocarpus heterophyllus* Lamk., Fig. 6: *Clerodendron infortunatum* L., Fig. 7: *Plumbago zeylanica* L., Fig. 8: *Musa paradisiaca* L., Fig. 9: *Scoparia dulcis* L.

## Conclusion

Present study has established that *Amao* is a potential source of yeast medium used for fermenting cooked rice and preparing different kinds of *Jou*. It has a large bearing on the social-cultural and personal lives of the Boros of Kokrajhar district of Assam and Northeast India. These has been in practices and known to the Boro tribe since time immemorial. Plants species used in the preparation of *Amao* in present days is limited in comparison to olden days; hence in depth investigation among the tribe, would reveal the lost knowledge of plants. Besides commercial exploitation of these plants as yeast media may be explored.

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## Reference

1. Endle R. The Kacharis. Bina Library, Panbazar, Guwahati, 1911, 01.
2. Narjary P.K., "Hidden Truth of Ethnic Clash Between Boro Tribe and Santhals in Assam, India". Stud. Tribes Tribals 2006; 4(1):57-62.
3. Bordoloi B.N., Tribes of Assam Part-I. Tribal Research Institute, Guwahati-28, Assam 1987.
4. Bhattacharya P.C., "A Descriptive Analysis of the Boro Language". 2 maps. Gauhati University Department of Publications. 1977; 23: 380.
5. Bodoland Movement (1986-2001). A Dream and Reality. Compiled by Y*Amao* Zwhwlaio Brahma; Reo Reoa Narzihari; Urkhao Gwra Brahma; Uthrisar Khunggur Basumatary and Damasu Brahma. All Bodo Students' Union, Kokrajhar, 2001.
6. Tamang J.P. and Nikkuni S., "Selection of starter culture for production of kinema, fermented soybean food of the Himalaya". World Journal of Microbiology and Biotechnology, 1996; 12 (6): 629-635.
7. Teron R. Hor, the traditional alcoholic beverage of Karbi tribe of Assam. Natural Products Radiance 2006; 5(5):377-381.
8. Tsuyoshi N., Fudou R., Yamanaka S., Kozaki M., Tamang N., Thapa S. and Tamang J.P., "Identification of yeast strains isolated from Murcha in Sikkim, a microbial starter for amylolytic fermentation". Int J Food Microbiol, 2005; 99: 135-146.
9. Kardong D., Deori K., Sood K., Yadav R.N.S., Bora T.C. and Gogoi B.K. "Evaluation of nutritional and Biochemical aspects Po: ro apong (saimod)- A home made alcoholic rice beverage of Mising tribe of Assam, India". Indian Journal of Traditional Knowledge, 2012; Vol 11(3):499-504.
10. Terangpi R., Basumatary R., Tamuli A.K. & Teron R., "Pharmacognostic and Physicochemical evaluation of stem bark of *Acacia pennata* (L.) Willd., a folk plant of the Dimasa tribe of Assam". Journal of pharmacognosy and phytochemistry, 2013; Vol 2 (2): 134-140.
11. Balakrishnan N.P., Flora of Jowai, Botanical Survey of India, Howrah, 1983; 2: 343-344.
12. Chopra R.N., Nayar S.L., Chopra I.C. Glossary of Indian Medicinal Plants, CSIR, New Delhi 1956; 2-3.
13. Jain S.K. and Rao R.R., A Handbook of Field and Herbarium Methods (Today's and Tomorrow Publishers, New Delhi), 1977.