

## Establishing the Microbial Diversity of Traditionally Prepared Rice Beer of Northeast India to Impact in Increasing Its Shelf Life

**Authors :** Shreya Borthakur, Adhar Sharma

**Abstract :** The North-east states of India are well known for their age-old practice of preparing alcoholic beer from rice and millet. They do so in a traditional way by sprinkling starter cake (inoculum) on cooked rice or millet after which the fermentation starts and eventually, forms the beer. This starter cake has a rich composition of different microbes and medicinal herbs along with the powdered rice dough or maize dough with rice bran. The starter cake microbial composition has an important role in determining the microbial succession and metabolic secretions as the fermentation proceeds from the early to its late stage, thus, giving the beer a unique aroma, taste, and other sensory properties of traditionally prepared beer. Here, We have worked on identifying and characterizing the microbial community in the starter cakes prepared by the Monpa and Galo tribes of Arunachal Pradesh. A total of 18 microbial strains have been isolated from the starter cake of Monpa tribe, while 10 microbial isolates in that of Galo tribe. A metagenomic approach was applied to enumerate the cultural and non-cultural microbes present in the starter cakes prepared by the Monpa and Galo tribes of Arunachal Pradesh. The findings of the mini-project lays foundation to understand the role of microbes present in the starter cake in the beer's fermentation process and will aide in future research on re-formulating the starter cakes to prevent the early spoilage of the ready to consume beer as the traditional rice beer has a short shelf-life. The paper concludes with the way forward being controlled CRISPR-Cas9.

**Keywords :** fermentation, traditional beer, microbial succession, preservation, CRISPR-Cas, food microbiology

**Conference Title :** ICAM 2023 : International Conference on Advances in Microbiology

**Conference Location :** Tokyo, Japan

**Conference Dates :** October 09-10, 2023