

Yak Milk Products: Local Product with Global Vista

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India is the top milk producer in the world and the total milk production was recorded at 230.58 million tonnes in the year 2022-23. The per capita availability of milk is 459 grams per day which by far exceeds the ICMR recommendation of 280 grams per day. The dairy animal population plays a crucial role in these dynamics. Bovine species like cattle, buffalo, yak and mithun are found in good numbers in India and a population of 303.76 million was recorded in the 20th Livestock Census. The contribution of the dairy products through exports was valued at 284.65 US Million Dollars in 2022-23. This is an ever-growing industry with vast potential which are still unexplored in areas like value added dairy products amongst others (Basic Animal Husbandry Statistics, 2023). Besides harboring a large bovine population, India is home to exotic bovine species like the yak and mithun. The yaks are found in Ladakh, Arunachal Pradesh, Sikkim and Himachal Pradesh. This bovine plays an important role in the socio-economic and cultural lives of its herders. Found at altitude above 3000 meters, the yak prefers cold climate and is found to be a resilient species with good survivability in the upper reaches of the treacherous trans- Himalayan terrain. The yak is found to have multiple utility as milk and meat animal besides providing fibre for use by its herder for making varied products. Interestingly, yaks are also very good pack animals. While its dung is used as fuel by the highlanders. The milk products of yaks are a cherished food item in the regions where yaks are reared (Mepfhuo et. al., 2023). While each of the products from yak offers immense potential. In this article, the yak milk products will be expounded.

Yaks are reared in the transhumance system wherein there is movement of yak herds from lower to higher altitude in the summer months in search of grazing pastures and downward movement in the winter months. Yak milk is a prized commodity in the communities which are involved in rearing this species. Traditionally, lactating female yaks are milked once a day. However, the yaks yield very less

milk quantity, as little as 1.1 Kg/day. Yak milk tastes sweet with a pleasant smell. The solid content ranges from 15 to 18 per cent, fat content is between 5.5 to 9 per cent, while protein content ranges from 4 to 5.9 per cent (Kataktaaware et al,2008). Therefore, in comparison to cow and goat milk, it is found to have higher solid, fat and protein contents. Yak milk and milk products are staple food of the yak herders. In fact, the yak herders pay grazing tax in the form of the milk products like churpi (fermented cheese) and butter (known as mar) to the communities to whom the grazing grounds belong and also to the monasteries (Bora et al,2012). Yak herders at such do not drink raw milk, instead they prefer to prepare different yak milk products namely, churpi (fermented wet cheese), butter (mar), butter tea and churkam (candy like product).



Fig. 1: A herd of yaks at Muguthang Valley (located at an altitude of 15000 ft), North Sikkim

The common yak milk products prepared by the yak herders at their household are:

- 1) **Churpi (fermented wet cheese)** also known as chura: This milk product is a source of protein for the yak herders. It is prepared traditionally in a cylindrical churner made of wood and bamboo strips. This is one of the low-cost technologies of the yak herders. The churpi is ripened and stored in yak skin for many years. The older the churpi, the more it is preferred by the locals as a delicacy, fetching good prices for the herders. The freshly prepared churpi are also wrapped in Rhododendron leaves and

stored for some days. This product is added in various dishes and added to meat and vegetables stews (Kataktalware et. al., 2008).

- 2) **Butter** also known as mar is one of the yak milk products. The yak herders collect the milk for a period of two to three days during which the milk is fermented. This fermented milk is then churned for 2-3 hours to separate the butter. The butter is also used at the household level and also used for paying grazing taxes along with the churpi. From the butter, butter tea, a favourite beverage of the Himalayan region where yaks are found is made. This is prepared by churning butter in mixture of tea extract, salt and little milk in a wooden churner, this result in a thin soup like consistency and is served hot to their guests by the yak herders (Kataktalware et al,2008).
- 3) **Churkam (hard cheese candy):** This is another popular milk product relish by the highlanders. It is in the form of a hard candy and gradually gives energy as it is slowly chewed on. It is a good source of energy for those trekking through the high mountains and to the yak herders as they traverse through the mountains along with the yak herds. The product is obtained from the hard mass that is left after separation of the cream from the raw milk following standard protocol (Kataktalware et al,2008)



Fig. 2: Display of churkam (hard yak cheese candy) at a yak herder's hut

The listed items are the mostly commonly prepared items at the yak herders' household. However, good quality ghee and paneer can also be prepared from the yak milk. Yaks act as an ingredient

for poverty alleviation and food security, and projects an area of research on conservation and fermentation technology of traditional food items (Ghatani and Tamang, 2016). In a recent development, the ICAR-National Research Centre on Yak, Dirang have taken a lead in getting the Geographical Indication (GI) tag for the Arunachal Pradesh Yak Churpi. It is the first among yak products to get such recognition (Arunachal Observer, 5th October 2023). On the initiative of the institute the first cooperative society of yak herders, 'Arunachal Pradesh Yak Herders and Products Development Cooperative Society Ltd' have been formed on January 2024 (Arunachal Observer, 3rd February, 2024). Meanwhile, the institute is also focused on developing technologies to prepare more products from the yak milk while maintaining the quality of the products. All these efforts of the different stakeholders of yak husbandry in the country viz.; research institute, state govts., NGOs, banking institutions etc will pave the way for making yak rearing a profitable venture while maintaining the population of the animal and ensuring that the yak herders come on par with the other livestock rearers in terms of scientific practices and management, besides access to social welfare schemes and amenities.

Conclusion

As much as the yaks are cherished by its herders, the products especially obtained from this resilient bovine species are relished by the community members raising this animal. The milk and milk products are source of nutritional and financial security for the rearers and herders alike. However, the decreasing yak population is a major obstacle in this enterprise. Therefore, measures need to be taken to make this enterprise a sustainable one. The first would be to increase the population of the animals which would involve integrating scientific rearing and management practices with the existing traditional ones to optimize the production and productivity of the animals. Secondly, quality of the products should be maintained and proper market linkage established to make this enterprise a profitable venture, which will also encourage the young upcoming generation to take up this venture in the future while maintaining the socio-economic and socio-cultural fabric that is

associated with this animal. Likewise, policies can be put in place gradually by respective state governments for the yak breeding and for the upliftment of the yak herders. The yaks are truly a precious resource of this country and its sustainability is the key cornerstone to ensure that it continues to remain an integral part of the fauna of the Himalayan region while adding a pinch of local flavor to the global palate through its milk products.

References

- Anonymous (2023). Basic Animal Husbandry Statistics. Ministry of Fisheries, Animal Husbandry & Dairying. Department of Animal Husbandry & Dairying, Govt. of India. Krishi Bhawan, New Delhi, 8-12.
- Arunachal Yak Churpi 1st to get GI tag in state. Arunachal Observer, 5th October 2023, 1 & 3.
- Bora, L., Paul, V. and Ahmed, F. U. A. (2012). Yak pastoralists of Arunachal Pradesh, 1-26. National Research Centre on Yak, Arunachal Pradesh.
- Cooperative society to boost welfare of Brokpas: Dr Sarkar. Arunachal Observer, 3rd February, 2024, 1.
- Ghatani, K and Tamang, B. (2016). Indigenous rearing practices of Yak and its multipurpose uses in the Sikkim Himalayas. Journal of Agriculture and Veterinary Science Volume 9, Issue 3 Ver. I (Mar. 2016), 01-08.
- Kataktalware., M. A., Saravanan, B. C. and Ramesha, K. P. (2008). Traditional system of Yak rearing in India. Yak-Moving Treasure of the Himalayas, ed. K. P. Ramesha, 95-101. National Research Centre on Yak, Arunachal Pradesh.
- Mepfhuo, K., Bam, J., Paul, V and Sarkar, M. (2023). Effect of COVID 19 on the migratory route followed by Brokpas: A case study. Post Pandemic Perspectives: Public Health, Management and Socio-economics, ed. Gyanabati Khuraijam and Kaju Nath, 167-172. Authors press, New Delhi.

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