



Churpy-An Important Yak Milk Product and its Traditional Way of Making for Livelihood of Tribal People of Zaskar, Ladakh

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ABSTRACT

Zaskar is famous for its traditional way of Churpy making. Farmers are not using any kind of machine in the entire process of Churpy making nor any preservative for its packaging. Women plays a vital role in the whole process of Churpy making. This residue free Churpy is now a days in huge demand especially in the Buddhist dominated areas of Leh and fetches handsome money in the local market. Tribal people of Ladakh prepare various types of indigenous milk products using their traditional knowledge. Among them Cheese (Churpy) is one of the important by product of female Yak milk (*omha*), and one of the important nutritional foods of Ladakh. Farmers usually remain busy with processing of various traditional milk products, such as butter, cheese (churpy), curd etc. in traditional ways and preserve them for winter.

Key Words: *Churpy*, Indigenous, Ladakh, Milk, Yak, Zaskar.

INTRODUCTION

Zaskar valley is the remotest and the least accessible block of Kargil district in Ladakh region. Zaskar is among the cold arid inhabited highlands of the world, lying within an altitudinal range of 3,500 m to 6,478 m above mean sea level. Annually, temperature varies between 28°C to -30°C. In Zaskar valley, crop land is less than 1 percent of the total geographic area. Due to abundance of grazing highland pastures/ rangelands and limited crop land and farming opportunities, the livelihoods of the tribal people of Zaskar valley is dominated by agro-pastoral farming, comprising of few crops-like barley, pea and mustard, cattle, horses, yak, sheep and goats. Livelihood dependence of households on agro-pastoral farming activities is almost 95 percent. Therefore, livelihoods of Zaskar valley farmers revolves around three principal farming activities;

(i) summer season crop cultivation, (ii) year round livestock (cattle, yak, dzomo, zho, sheep and goat) husbandry; and (iii) summer season nomadic Pastoralism- where by yak, cattle, dzomo, zho, sheep and goat and horses are taken to meadows beyond human settlements. Farming and livestock husbandry are the major food and income sources which contributes around 60 percent and keep the people engaged year round. Since centuries, the changpa tribe of Ladakh prepares various type of indigenous milk products using their traditional knowledge. Among them Cheese (Churpy) is one of the important by product of female Yak milk (*omha*), and one of the important traditional foods of Changpa tribe of Ladakh. The objective of the study was to ascertain the processing methodology adapted by local people for its preparation.

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MATERIALS AND METHOD

Summer season was utilized for data collection by visiting the villages and pasture land of Zanaskar area. Three Villages of Zanaskar *viz*; Kashar, Hongchat, Salapi and two pasture lands namely Rangdum and penzilla top of district kargil were randomly selected for the present study. Information and data were generated during the year 2016 from local people, especially from the tribal women who were involved in this practice since decades and from the households where families maintain yak herd as a primary means of livelihood. From each selected village and pasture land, 10 farmers were selected randomly. The data were collected from 50 respondents during the field visits with the help of personal interviews and on-spot direct observations regarding processing of churpy and milk production. An interview schedule with open ended questions was used to collect the data.

RESULTS AND DISCUSSION

Pastoralism is the mainstay of the people of Ladakh who live in the elevated regions of Changthang and Zanskar. Livestock rearing is the main activity of the people of Zanskar region. They mostly rear yak, dzomo, zoh, horse, goat and sheep. They move to upper area where their livestock graze on the alpine meadows and mountain. During summer season they have availability of nutritive rich grasses in alpine meadows and mountains, which help to increase in milk production of their livestock. But due to non availability of market, they convert their raw milk into various byproducts, which they preserve and later utilize during harsh winter months as a source of protein. Farmers also sell these preserved products in adjacent areas and fetch good price. The nomads usually remain busy with processing of various traditional milk products in traditional ways; many products are unique to Ladakh such as butter, cheese (*churpy*) etc.

Yak milk is called natural concentrated milk because of its high fat, protein and lactose content. Milk yields of the yak vary but average from 1-2 kg/day while that from hybrids is higher (Jain, 1986).

Table 1. Composition of Yak Milk.

Sr. No.	Nutrient	Percentage (%)
1	Fat	5.5 – 7.7
2	Protein	4.0 – 6.0
3	Lactose	4.0 – 5.8
4	TS	15.6
5	SNF	7.1
6	Ash	0.42

{Yu, QL *et al*, 2005 and Mondal and Pal, 1996}

Yak milk and milk products are gaining popularity due to their special nutritional value and no preservative is added in its entire traditional way of making. *Churpy* is one of the important products of yak milk and their traditional method of preparation is discussed as under. **The Processing of Churpy**

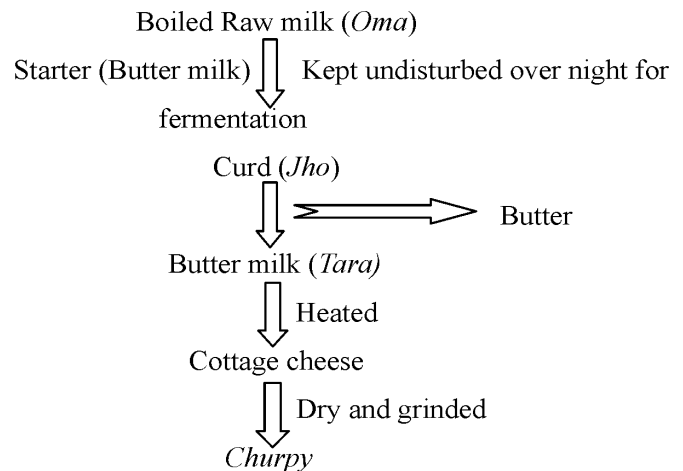


Fig.1. Flow diagram showing steps of preparation of *Churpy*.

Raw Milk

Raw milk (*oma*) is procured from crossbred of yak and local cattle, female yak locally called as dzomo in a big steel vessel. Each nomadic family is having about 5 to 10 numbers of female yak having average per day milk production of 4 to 5 kg per dzomo. Raw milk is then boiled for half an hour depends upon the quantity of milk. Boiled milk is inoculated with some starter and kept undisturbed in a big wooden vessel for overnight at warm place

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to form curd (Jho), (Raj and Sharma, 2015).

Curd

Curd locally called as *Jho*, Curd is than churned in a big wooden vessel which is made from juniper wood by local woman folk some times by man also. While performing this process the woman flock used to sing some local song. It required three thousands (3000) rounds for separation of butter (*marr*) from butter milk (*tara*) warm water is also added at some intervals for better separation. This butter milk is than use for preparation of Cottage cheese.

Butter milk

Butter milk locally called as *Tara*, is boiled and allows to cool for 15 to 20 minutes which help in separation of solid (cottage cheese) from liquid portion whey (chhurkhu) of butter milk. Solid portion is kept in a locally made wooden basket over locally made stone structure to remove liquid portion of butter milk. Liquid portion of butter milk is used for animal drink and the solid portion is further process for making of churpy.

Cottage Cheese

It is wet cottage cheese separated after boiling of butter milk. It possesses 73.8 percent moisture (Dawan,2002) which decreases its keeping quality. It is than traditionally converted and processed into churpy. Wet cottage cheese is press by weight using heavy stone over it for one night to remove moisture from it, it if further dried to remove leftover moisture from it.

Churpy

It is a (dried cottage cheese) product of yak milk. The wet cottage cheese is divided into small round loaves of irregular shape and size which are then dried directly under sunlight over the roof for one day to reduce its moisture content so that to increases its storability. Now a day's solar dryer are also used to dry this indigenous product. Churpy is preserved in this manner for many years, the more the churpy is ripened the more it is valued, it is an important part of ethnic food of the changpa tribe.

The technology of churpy making is one of the low cost technology developed by the people and is well adopted by the changpa tribe of Zanaskar. The dry matter of churpy ranges from 24 to 25 percent, Ramesha *et al* (2006). The product has some disadvantage of post product contamination due to storage in animal skin and wooden box for long duration without using any preservative. Churpy enhances the taste and flavour of their ethnic food therefore added to all type of vegetable as well as meat preparations. The nutrient content of churpy reported by Attenborough *et al* (1994) is presented in table 2. It is clear from the table that the churpy is very good source of protein and fat for these people.

Tab. 2. Nutrient content (on wet weight basis) of Churpy.

Item	Dry wt. (g/100g)	Protein (g/100g)	Metabolisable Energy (Kcal/100g)	Fat (g/100g)
Dried Cheese (Churpy)	90.94	54.40	452	20.98

Table. 3. Sensory and production related characteristic/parameters of Yak milk product as related by beneficiaries.

Sr. No.	Sensory and production parameters/Characteristic	Observation
1	Taste of Churpy	Slightly sour
2	Colour of Churpy	White to orange
3	Consistency of Churpy	Very hard
4	Storage quality	Very good
5	Appearance	Uneven surface
6	Processing of Milk into milk product	Butter, Churpy
7	Involvement of churpy processing	Mostly Women folk
8	Traditional processing of churpy	100per cent
9	Marketing of milk	Not well organised
10	Price of churpy per kg.	250-300

11	Butter milk required for making of 1kg churpy	8-10 kg butter milk
12	Sale price of milk	20-25
13	Milk production per day per dzomo	4-5kg
14	Milk production per day per yak	1-2kg

It was evident from the table and 100 per cent of yak milk is processed by traditional method and by the local women folk. It is because they don't have any organised marketing facility in pasture land so they are bound to process it and convert it into various raw products to preserve it for winter months or to sell it when they found its market in the village. The present study revealed that *churpy* was found better in terms of storage quality; however it becomes very hard in consistency on storage and turns white to orange in colour with slight sour in taste, which was in agreement with the results as reported by Ramesha *et al* (2006). This effect is primarily due to fermentation of *churpy*, fermentation conserves all the critical nutrients of milk and modifies others, enhancing its nutritive and healthy benefits but alters its colour and taste.

However it was revealed from the present study that 8 to 10 kg butter milk is used for production of 1kg churpy. It acts as a profitable venture because the butter milk being a by product is of no use. So they convert it into a valuable product (*churpy*) which they sell for about Rs. 250 to 300/ kg, which ultimately enhance their socio economic status.

Now a days, farmers are interested to rear Dzomo which is a female cross of yak and local cattle, as the milk production of dzomo is almost three times more than milk production of pure breed of female yak (Jain, 1986). It was revealed that mostly women folk is involved in the entire processing of milk and milk products and all the products developed by traditional method and there is no involvement of any advance tools and additives in the final product. The product so developed in this way is very rich in its nutritive value and considered as purely organic.

Due to a shortage of fruit and vegetables, and limited food resources, in these disadvantageous areas, Yak milk and milk products (butter and cheese *Churpy*) are a vital source of vitamins and major sources of nutrition for Ladakhi people. Yak milk and milk products are the major ingredients of the daily diet of people of Ladakh, particularly for the weak, ill, elderly and pregnant women.

B:C ratio is based on the interview of the respondents and local market survey.

From the data (Table 4) it was evident that *churpy* making is a profitable venture for the tribal people. Even if we include the cost of butter milk, cost of labourers for processing and dung cakes for heating of butter milk, into consideration, which otherwise are locally available in abundance and are thus either free of cost or at meagre rates, still the benefit from the production of churpy will be still on much higher side. That is a boon for the

Table 4. Benefit cost ratio of Churpy.

Sr. No	Particular	Input	Cost/ unit (Rs)	Total cost (Rs)	Outputs	Price/ kg (Rs)	Gross return(Rs)	Net Returns (Rs)	B.C.Ratio
1	Butter milk	100 kg	2/kg	200	10 kg Churpy	300	3000	2260	3.0
2	Dung cakes	20kg	2/kg	40					
3	Processing	2 man days / Labour	250/MD	500					
Total				740			3000	2260	3.0

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Fig 1. Butter Milk (Tara)



Fig 2. Instrument for boiling of Curd



Fig 3. Locally Whey Drainage



Fig.4



Fig.5 Cottage Cheese(Labo)



Fig.6 Cottage Cheese ball



Fig.7 Chhura (solar drying)



Fig.8 Chhura



Fig.9 Churpy (Sun Drying on top of the roof)

economically backward Buddhist tribal of Ladakh.

CONCLUSION

It was concluded from the study that due to less availability of vegetables because of closure of road for 6m in winter, food from animal origin becomes much important in the area, milk being the most important among them. People of the region have traditionally developed the method of milk processing that is unique to this region. There is no popularization of these products, resulting in lack of interest among new generation. So there is need of popularization and marketing of these products

other than their local markets. This can be achieved through development and dissemination of techniques for value-addition of yak milk, products, producing 'organic' milk products developing eco-tourism in the yak inhabited areas.

ACKNOWLEDGMENT

The authors sincerely acknowledge the support of Mr. Tstring Tashi, Mr. Lobzan Tsetup, Mr. Tstring Angchuk, Mr. Tsewang Nurboo and other livestock owners who share their experience regarding milk production and processing and livestock rearing.

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Received on 09/11/2018 Accepted on 15/12/2018