

Kumis/Koumiss



- 1. Kumis is a fermented dairy product traditionally made from mare's milk as a result of lactic-acid and alcoholic fermentation.**
- 2. This traditional drink remains important to the people of the Central Asian steppes, including the Turks, Bashkirs, Mongols, Yakuts and Uzbeks. It is native to parts of southern Russia.**
- 3. In Kyrgyzstan's Alai mountains, some nomadic communities are famous for their kumis, which attracts visitors from the cities who come to drink it for its purported health benefits.**
- 4. The name Kumis was derived from a tribe called Kumanes, who lived along the river Kumane in the Asiatic Steppes. In earlier days, to accelerate the fermentation of Kumis, pieces of horse flesh or tendon or some vegetable matter were added to the mare's milk placed into bags made from the skin of lamb presumably to provide microflora needed for fermentation. Mare's milk does not coagulate at the isoelectric point of casein and hence, it is not considered as a curdled product.**
- 5. Nowadays, cow's milk instead of mare's and widely consumed in Eastern Europe.**

Major end products in Kumis are 0.7%-1.8% of lactic acid, 1.3% of ethanol and 0.5-0.8% of carbon dioxide.

Kumis from mare's milk is of composition:

Lactose	2.3%
Fat	1.5%
Proteins	2.0%
Lactic acid	0.7-0.9%
Alcohol	1-2%

Types of Kumis: There are three types of Kumis based on the concentrations of alcohol and lactic acid:

Types of Kumis	Lactic acid	Alcohol
Low acidic and low alcoholic	0.6%	0.7%
Medium acidic and medium alcoholic	0.8%	1.1-1.7%
High acidic and high alcoholic	1.0%	1.7-2.5%

Every sip is a new journey.....

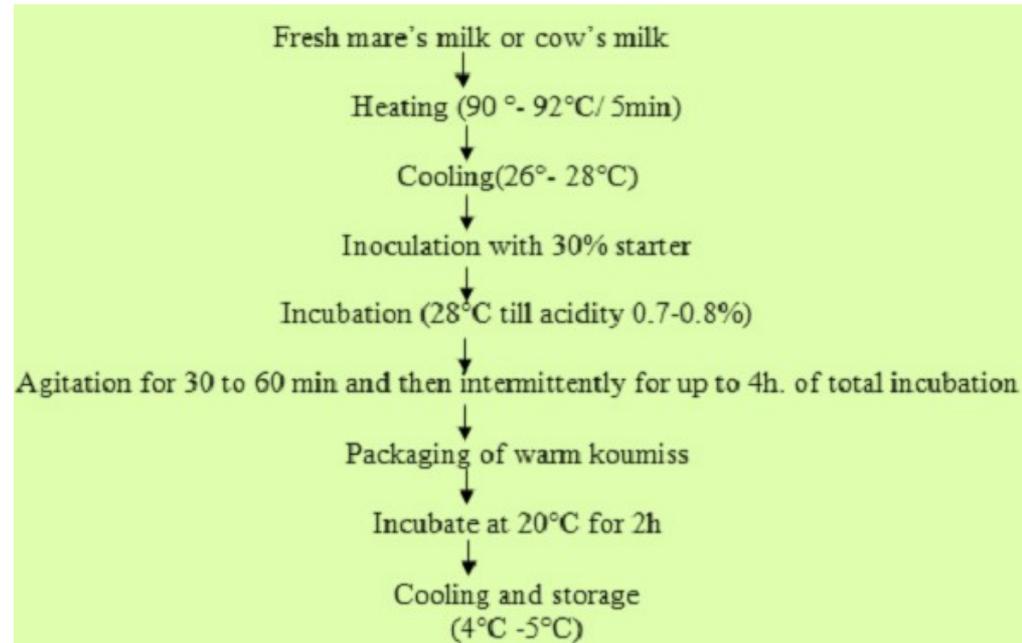


Making of Kumis

1. Koumiss is made by fermenting mare's milk. During fermentation, lactobacilli acidify the milk, and yeasts turn it into a carbonated and mildly alcoholic drink.
2. Today, a wooden vat or plastic barrel may be used in place of the leather container. In northern or western China, the skin partially filled with mares' milk, is hung at the door of each home during the season and passersby, give each such skin a good punch as they walk by, agitating the contents so that they would turn into koumiss rather than coagulate and spoil.



Traditional vessels



- 3. Industrial-scale production of koumiss generally uses cow's milk because of the limited availability of mare's milk even in the areas of the world where koumiss is popular today.**
- 4. Cow milk is richer in fat and protein but lower in lactose than horse milk. Before fermentation, mare's milk has almost 40% more lactose than cow's milk. Therefore, the cow's milk is fortified and sucrose may be added, to allow a comparable fermentation.**
- 5. Another technique adds modified whey in order to better approximate the composition of mare's milk. During fermentation, the lactose in mare's milk is converted into lactic acid, ethanol, and CO₂ and the milk becomes an accessible source of nutrition for people who are lactose intolerant.**
- 6. The whole process of fermentation milk should be kept constantly agitated by stirring. This helps in incorporation of oxygen to the fermenting fluid. It also causes breaking up of the precipitated casein into very fine particles. This contributes to ease of digestibility of koumiss.**



Visitors from the cities often come to the mountains to drink fresh kumis

A wooden barrel is a more modern alternative to the goatskin



Starters of Kumis

- In early days, koumiss from a previous batch was used as starter.
- Nowadays purified starters are being used for the production of koumiss. It mainly comprised of *L. orientburgii*, *L. bulgaricus*, *L. acidophilus* and lactose fermenting yeasts namely *Torula kumiss* and *Saccharomyces lactis*.
- It is also possible to find lactic streptococci, coliforms and some spore forming bacilli in koumiss.

Finished kumis is milky white/greyish liquid, sourish alcoholic flavour and fizzy appearance.

Therapeutic and nutritive significance of Kumis:

- ❖ This effervescent acidic, alcoholic fermented milk has well known therapeutic benefits.
- ❖ Sugar has been replaced by lactic acid, alcohol and carbon dioxide gas. The casein has been partly precipitated in a state of very fine division and partly predigested and dissolved. There was not much change in fat and salts.
- ❖ The acid and alcohol produced help in the process of digestion and ease of absorption of fat and minerals.
- ❖ Nutritive and stimulating qualities of Koumiss render it very valuable for nursing females.
- ❖ Koumiss is considered to be a refreshing therapeutic drink. In USSR, this preparation is used for the treatment of pulmonary tuberculosis.

- ❖ Koumiss possesses diuretic properties and helps in preventing intestinal putrefaction.
- ❖ Koumiss has been employed with success in diabetes.
- ❖ Koumiss can be a promising carrier of currently-in-use and future probiotic microbes which could provide consumers with health benefits beyond traditional nutrition, thus contributing to sustaining human health and well-being.



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