



YOGURT, KEFIR AND MORE: THE FERMENTED MILK SQUAD

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Introduction

Fermentation is a natural process which has been used since ancient times. It is a preservation technique that does not require oxygen. In several countries fermented food has been a part of traditional cooking. Milk is one of the major fermented foods and it includes yogurt, cheese, sour cream, buttermilk, clabbered milk, cultured butter, kefir etc. Milk is usually fermented with bacteria such as *Lactobacillus acidophilus*, *Lactococcus lactis*, *Leuconostoc* spp etc. The major benefits of fermented milk and milk products include their unique flavor, improved digestibility, added probiotics, increased shelf life, presence of vitamins and minerals. It is also used in treatment of common cold, increased blood pressure, irregular bowel movements, increased cholesterol levels constipation, hay fever, asthma etc.



Yogurt

It is a semi-solid fermented product which was introduced as a staple food in Middle Eastern countries thousands of years

ago. It is the product of fermentation by *Lactobacillus bulgaricus* and *Streptococcus thermophilus*. These bacteria are commonly known as 'yogurt cultures'.

It is a good source of protein, vitamin niacin, riboflavin etc. Lactose intolerant individuals are more tolerant to yogurt than milk. It contains calcium which is necessary for healthy teeth and bones. It provides protection against heart disease and certain neural tube birth defects. It is also used in diet to lose weight. It may also contain probiotics which improve gut health and prevent occurrence of gastro-intestinal disorders.

Curd

Curd otherwise dahi is also semi-solid fermented product made by curdling of milk using rennet or yeast and LAB. The difference between curd and yogurt is that the former has loose texture and mild flavor as it's fermentation process is less controlled whereas the latter has a thicker consistency with tangy taste due to more controlled fermentation.



It's benefits include improvement of digestive system, increases absorptive power of various minerals and vitamins from other foods, reduce stomach problems, boosts immunity, promotes glowing and healthy skin, minimize high blood pressure, strengthen bones and teeth because of the increased calcium level. It helps in preventing vaginal infections by balancing out vaginal pH and therefore improve vaginal health.

Cheese

Cheese is a fermented product formed by the coagulation of curd. The milk is usually acidified during production and coagulation is done by the activity of enzyme rennet. The types of cheeses available in the market has grown in the recent years. Cheese is a must addition for foods like sandwich, pizza, burger, palak paneer, cheese cake, salad etc. It can alone be used as a snack or appetizer. There are variety of cheeses in varying degrees, from light to strong flavor and different fat composition. Herbs, spices, or wood smoke may be used as flavoring agents.



Cheese has many benefits, it is a great source of calcium and protein. It is also rich in phosphorous due to which it protect tooth enamel. A person can include an average amount of cheese in their healthy dietary eating plan. It is said that 1000 milli grams of calcium should be intaken by men and women whose age is between 19-50 years. By eating an ounce of cheddar cheese this criteria can be fulfilled. Cheese promotes bone health, dental

health and lowers blood pressure. Some type of cheese contains omega-3 fatty acids which is good for the cardio-vascular system and brain health. Types of cheese include blue cheese, hard cheese, semi-hard cheese, fresh cheese, soft cheese, semi-soft cheese and processed cheese.

Kefir

Kefir is a drink made from fermented milk. The word "Kefir" was originated from another word "Keif" whose meaning is "good feeling" and it is of Turkish origin. It contains milk and kefir grains which contain active microorganisms like lactic acid bacteria (83-90 %) and yeast (10-17 %). It has a tangy and tart flavor. It may taste slightly carbonated because of the fermentation process.



Kefir mainly contains phosphorous, magnesium, calcium and vitamins B2, B12, D, K and A. It is also rich in nutrients including folic acid. The researchers are still working on the kefir's health benefits but some evidence shows that it helps to control the blood sugar level, lowers the cholesterol level and also in the gut health.

Buttermilk

Buttermilk is an excellent refresher during summer times. After the churning of whole milk into butter the leftover product is the buttermilk. Nowadays most of the buttermilk is cultured means that it contains beneficial bacteria. The traditional buttermilk is rarely found in western countries but

common in countries like Nepal, Pakistan and India. In comparison to milk buttermilk has thicker consistency.

Bacteria in the buttermilk produces lactic acid, hence the pH level is decreased which constitute for thicker consistency. Buttermilk is an excellent source of many nutrients like calcium, protein, carbohydrates, fat, sodium, riboflavin, vitamin B12 and pantothenic acid. Buttermilk is easier to digest than other dairy products. It helps to promote gut health.

Sour Cream



Sour cream is also a delicacy made by bacteria which produces lactic acid by adding it into cream. It is slightly tart and a thicker product. It has thick and smooth texture with a mild flavor. It has fat content between 10-14%. Sour cream contains probiotic bacteria, which helps to reduce gastro-intestinal problems and promote over all body immunity. Sour cream is rich in vitamin A which helps in eyesight and prevent macular degeneration. It also contains calcium and phosphorous which plays a vital role in strengthening our bones and maintaining dental health.

Conclusion

Since 10,000 BC milk has been used a principal food all over the world. It included use of milk as whole and fermented milk products. Each has their own benefits like enhanced digestibility, vitamins, boosting

immunity, bone and teeth health. Fermentation process increase the shelf life of milk by converting it into other products. As we have explored in this article the fermentation of milk is really fascinating which involves a number of microorganisms. All of the products are unique in their flavors.