Various Homemade Milk Byproducts.

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Abstract: The purpose of this research article is to examine the domestic milk byproducts and their possible applications. This essay will examine the different milk processing byproducts and how they might be used to create creative and nutritious dairy products. Humans consuming milk produced by animals form long years ago. Milk is converted into several milk products such as liquid milk as beverage, butter, buttermilk, curd, paneer and whey.

Keywords: Milk, Byproducts, Paneer, Butter, Buttermilk, Curd, Whey.

INTRODUCTION

Milk is a very important product which comes from various mammals. It is a nutritious secretion of mammary glands of female of various mammals like Cow, Buffalo, Goat, Sheep, Horse, Humans etc. India is having largest milk production all over the world. Total 78 million tonnes of milk has produced in India every year [5]. Out of that 50% of the milk produced in India is use as whole milk and the remaining is turns into various by products, which includes Paneer, Butter, Buttermilk, Curd, whey etc.

The percentage consumption pattern of different milk products in India are - liquid milk consumption accounts for 45.7% of total milk output, while 39% is converted into butter, 6.9% into curd, 6.5% into khoa and similar milk sweet, 3.7% into milk powder including infant milk food, 1.9% into paneer, chhana and cheese, 0.6% into ice cream and kulfi, 0.2% into cream-0.2% and others dairy products absorbing the remaining 0.5% [8]. So the demand of the milk in developing countries is increase by 25% by 2025[10].

The quality of milk products will vary depending on the differences in the chemical makeup of the milk from different animals. Depending on the type of milk used, the quality of goods made from it that have a distinct chemical composition will change. For instance, buffalo due to the high fat content of milk, yogurt has a superior quality, being thick, creamy, and having a wonderful mouthfeel in contrast to yogurt made from milk that has a low amount of fat [9].

The present study was performed to throw out a light on the homemade byproducts of the milk.

MATERIALS AND METHODS

Collection of samples: A milk samples were collected from local milk producers for the purpose of various byproducts.

Paneer

Paneer is the Delicious byproduct which is made by milk. Paneer has contains fat and protein total 90%, minerals 50%, and lactose 10%. The proximate composition of paneer is 54% moisture, 17.5% proteins, 25% fat, 2% lactose, and 1.5% minerals [6]. Milk is heated up to 82^0c for 5 min. then cooled it to 70^0c. After cooling, add 1-2 % citric acid. Stir it well up to whey separates out. Set the mixture up to 10 min. separates the solid part from mixture and press the curd in muslin cloth. Cut the blocks by the size of your choice. Preserved in cold condition [12].

Butter

Butter is the fatty product resulted from the milk. Total 80 g fat and a maximum of 16 g water and 2 g nonfat milk solids collectively get from a 100g of butter [9]. It is generally made from the cream layer after boiling process. This cream layer is then collect and the addition of some Curd is takes place. After that it mix well with each other by using blender, while blending the cream should be cold. For that purpose add ice cubes in it. Keep whipping up to when to mixture is get curdled, at the end it will be completely curdled and the milk solid will be separated. Collect all butter with help of spatula. Add some cold water in the butter and keep it for 5 to 10 mins. Take away water from the butter. Butter is ready.

Buttermilk

Buttermilk is a liquid by product which is produced during manufacturing of dairy butter as by-product. Buttermilk contains 3.5–4.9 g /100 ml lactose, 0.5 g/100 ml lactic acid, 2.7–3.8 g/100 ml protein and ash 0.6–0.75 g/100 ml [7].

Buttermilk is form in the process of butter formation. After removing a solid part of butter the liquid portion is left, is called as buttermilk.

Ghee

It is a type of clarified part of butter. It is commonly used for Cooking, massage, traditional medicine, and for Hindu religious rituals. Ghee is used in digestive process because it stimulates the secretion of gastric acid. [4].

Makkhan is placed in a vessel (ghee boiler) and heated to about 110-120º C with constant stirring to evaporate practically all of the moisture. After that, the ghee residue is separated from ghee by filtration and the ghee packaged in suitable containers or pouch [13].

Curd

Milk is converted into curd or yogurt by the process of fermentation. The whole milk curd contains 85-88 % of water, fat 5-8 %, protein 3.2-3.4 %, lactose 4.6-5.2%, lactic acid 0.5-1.1%, ash 0.7-0.75% etc. [14]. Take a Raw milk. Boil it for 5 to 10 min. Cooled to at room temperature. Then add previous sample of curd in it. Stir it well. Keep it overnight. Store in cold storage.

Whey

Whey is the liquid remaining in the process of paneer formation. Total 10 litres of milk produces one kilogram of cheese or paneer and nine litres of whey [3]. Whey constitutes of milk solids (45–40%), milk sugar, i.e., lactose (70%), minerals (70–90%), proteins (20%) and vitamins (B and C) [1].Take two cups of milk. Slowly bring the milk to the boil, while stirring constantly. It is very important to constantly stir the milk otherwise it will burn. Turn off the heat once the milk is boiling. Leave the saucepan on the heat source to cool slowly. Add 4 teaspoon lemon juice to the boiling milk. At this point, the milk should cuddle and turn into curds and whey. Scoop out the curds and strained the liquid part which is the whey. Stored it separately.

CONCLUSION

Humans are using milk and milk byproducts as an important food form many years ago. It provides many nutrients. If more research develops on milk byproducts, it will be a great opportunity for dairy industry.

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[14] Reading Material for Curd (dahi) Production Under PMFME Scheme AATMANIRBHAR BHARAT National Institute of Food Technology Entrepreneurship and Management Deemed to be University (De-novo Category) under Section 3 of the UGC Act, 1956 An Autonomous Institution under Ministry of Food Processing Industries, Government of India Plot no 97, Sector 56, HSIIDC, Industrial Estate, Kundli, Sonepat, Haryana – 131028 Website: www.niftem.ac.in, Email: pmfmecell@niftem.ac.in, Contact No. 0130-2281089 PMFME – Curd (Dahi) Making.