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Studies on the potential approach of homemade curd fermentation

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ABSTRACT:

Curd is a rich source of nutrients such as calcium, phosphorus, vitamin B2, magnesium, and beneficial fatty acids which help to strengthen bones and teeth, improve digestion and reduce the risk of heart problems. There are different methods used in India for curd fermentation. In this research, we have tried almost six curd fermentation methods used in India. All six curd fermentation methods tried over this research have the ability to make solid curd. The curd prepared from six methods were tested on the ground of solidity, color, texture, aroma, and taste. Out of six curd fermentation methods, curd fermentation using previously formed curd as a sample was most efficient.

KEYWORDS: *Curd, Fermentation, solidity, color, texture, aroma, and taste*

INTRODUCTION:

Curd is obtained by coagulating milk in a sequential process called curdling. Curd, also known as Dahi, is a well-known milk product that is prepared by the process of fermentation. It is generally consumed on a daily basis, as a part of a meal or refreshment by a large part of the Indian population. Curd acts as a great probiotic (Kau *et al.*, 2011). The good bacteria present in curd helps to clear out the digestive system (Hawrelak *et al.*, 2004). It improves our gut activity and is great for treating an upset stomach (Nagpal *et al.*, 2002). The presence of good bacteria helps in boosting your overall health and creating a strong immunity against day-to-day airborne diseases. Rich in calcium and phosphorus, curd helps in the development of strong bones and teeth. Curd prevents the accumulation of cortisol in our bodies, which eventually leads to obesity and hypertension (Henao-Mejia *et al.*, 2012). Having curd on an everyday basis can help shed a few

pounds. Made through the curdling process using an edible acidic substance like vinegar or lemon juice, curd has acidic compounds that could act as antibacterial and antifungal to fight various skin problems. The antioxidants found in curd help in plumping up the skin and prevent premature wrinkles from showing (Ejtahed *et al.*, 2012). Curd helps in exfoliating the skin in a gentler way. Curd can be your natural remedy if you have dark spots or areas you would like to treat naturally. Having anti-fungal properties, curd can be your natural remedy to clear out stubborn dandruff. Maharashtra represents the largest market, accounting for the majority of the market share. The market is expected to reach a value of nearly INR 1,809.3 Billion by 2024. Various curd-making methods using curd samples, almond, citric acid, silver, chili stalk, and coconut curry were used now a day for making curd in India. In this project, we have tried various different methods of curd-making process across the country. This project is undertaken to find out the most efficient way of curd making.

OBJECTIVES:

Different curd-making samples were collected from various locations. Collected samples were added into Pasteurized milk for curd fermentation. Incubated all sample inoculated containers for 48 hrs. The solidity of curd formed was tested after every 8 hrs. of incubation. The potential curd-making process was examined after incubation.

MATERIALS AND METHODS:

Various curd-making samples such as curd samples, almonds, citric acid, silver, chili stalk, and coconut curry were collected in the sterile polythene bag. They all are brought to the laboratory and stored at a cool temperature for 2 to 4 days. 50 ml of pasteurized milk was added separately into the six different sterile conical flasks. The conical flasks were sterilized in an autoclave at 15 lb. (121.5⁰C for 15 minutes) pressure. Each sterile conical flask containing milk was inoculated with curd samples, almonds, citric acid, silver, chili stalk, and coconut curry separately. After inoculation, all six conical flasks were incubated for up to 48 hours of incubation time. Each flask was examined after every 8 hours of the time interval for solidity, color, texture, aroma, and taste.

RESULTS AND DISCUSSIONS:

All containers were solid after 48 hrs. of incubation. Curd sample and citric acid added milk sample was solid at 8 hrs. of incubation (**Table No.1**). Almonds, silver, chili stalk, and coconut curry added milk samples were formed small solid coagulates, and coagulates were settled at the bottom after 24 hrs. of incubation with different aromas, texture, and color. Most uniform, solid, aromatic with excellent texture and white-colored curd was formed in curd sample inoculated curd.

Table No. 1: Showing results of curd fermentation using various samples with time interval

Sr. No	Sample	Parameter	Incubation Time (48 hrs.) with time interval of 8 hrs.					
			8	16	24	32	40	48
1	Curd sample	Solidity	+	+	+	+	++	++
		Color	+	+	+	+	++	++
		Texture	+	+	+	+	++	++
		Aroma	+	+	+	+	++	++
		Taste	+	+	+	+	++	++
2	Almonds	Solidity	-	-	-	-	-	+
		Color	-	-	-	-	-	+
		Texture	-	-	-	-	-	+
		Aroma	-	-	-	-	-	+
		Taste	-	-	-	-	-	+
3	Citric acid	Solidity	+	+	+	+	+	+
		Color	+	+	+	+	+	+
		Texture	+	+	+	+	+	+
		Aroma	+	+	+	+	+	+
		Taste	+	+	+	+	+	+
4	Silver	Solidity	-	-	-	-	-	+
		Color	-	-	-	-	-	+
		Texture	-	-	-	-	-	+
		Aroma	-	-	-	-	-	+
		Taste	-	-	-	-	-	+
5	Chili stalk	Solidity	-	-	-	-	-	+
		Color	-	-	-	-	-	+
		Texture	-	-	-	-	-	+
		Aroma	-	-	-	-	-	+
		Taste	-	-	-	-	-	+
6	Coconut curry	Solidity	-	-	-	-	-	+
		Color	-	-	-	-	-	+
		Texture	-	-	-	-	-	+
		Aroma	-	-	-	-	-	+
		Taste	-	-	-	-	-	+

Notations: - "+" = Good
 "++" = Excellent
 "-" = Poor

CONCLUSIONS:

Curd prepared from curd sample was excellent quality. Curd made from other methods maybe harmful to consumer. Tannin in skin of almond may decrease body metabolism and digestion. Silver at high concentrations may cause toxic effects on the body.

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REFERENCES:

- 1 Kau AL, Ahern PP, Griffin NW, Goodman AL, Gordon JL. (2011). Human nutrition, the gut microbiome, and the immune system. *Nature*. 2011; 474:327–36.
- 2 Hawrelak JA, Myers SP. (2004). The causes of intestinal dysbiosis: a review. *Altern Med Rev*.9:180–97.
- 3 Nagpal R, Kumar A, Kumar M, Beha PV, Jain S, Yadav H. (2012). Probiotics, their health benefits, and applications for developing healthier foods: a review. *FEMS Microbiol Lett*. 2012; 334:1–15.
- 4 Henao-Mejia J, Elinav E, Jin C, Hao L, Mehal WZ, Strowig T. (2012). Inflammasome-mediated dysbiosis regulates the progression of NAFLD and obesity. *Nature*. 482:179–85.
- 5 Ejtahed HS, Mohtadi-Nia J, Homayouni-Rad A, Niafar M, Asghari-Jafarabadi M, and Mofid V. (2012). Probiotic yogurt improves antioxidant status in type 2 diabetic patients. *Nutrition*. 2012,28:539- 43.

