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Sensory analysis of value added paneer with different ratio of herbs like garlic and mint leaf and its physico-chemical analysis

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Abstract

“Paneer is a South Asian soft cheese made by coagulating milk with acid and heat and it contains higher amount in fat and proteins content, a small amount of lactose, salts, fat soluble vitamins and valuable minerals like Ca and P”.

Paneer is made from around 7% of all milk produced in India. It is vital to produce new sorts and variants of paneer in regulate to assemble the still-escalating stipulate for paneer among various health-conscious consumers.

In the present study, milk of buffalo (4.5% fat and 9% SNF) for production of Paneer throughout the research of paneer; four level of garlic paste that is 2, 4, 6 and 8 percent and four levels of mint leaf paste viz., 2, 4, 6 and 8 percent was added. The ratio of garlic paste and mint leaf paste [Garlic: Mint (1:1)] viz., 2, 4, 6 and 8 percent was added. The product prepared using 6 percent mint leaf paste in treatment T6 score the maximum in sensory parameter that is., flavor, color and outward show and overall acceptability and was considered to be the optimized product. Optimization of product was done by sensory evaluation. The physico-chemical and microbial analysis of the product was also carried out. Storage study of Paneer was carried out only for the optimized product stored at 5° C and concluded that treatment T6 was acceptable. The herbal milk paneer be store at 5° C for 25 being and analyzed on 0, 5, 10, 15, 20 and 25 days. Sensory evaluation basis we can say the quality of buffalo milk paneer was continuously deteriorating.

Keywords: Milk, paneer, mint, garlic, shelf-life

Introduction

Paneer is a pressed channa that is produced by acid coagulating milk at 85°C, then separating the whey and pressing it. “According to the PFA guideline, the moisture content of paneer should not exceed 70%. A concept of paneer has been suggested, stating that it is an Indian assortment of yielding cheese obtains by standard milk acidic flavour with mildly sweet taste, spongy body, and tight knit texture.

Paneer, an original dairy produce is produced by acidic and high temperature coagulation of milk. Sour milk, lactic or citric acid, and high temperature precipitation from buffalo milk or cow milk, or a combination of the two, are used to make it.

Garlic is a common herb that is grown all over the world. It is associated with onions, leeks, and chives. “Garlic is thought to have arisen in Siberia about 5000 years ago and spread across the globe. Garlic is most often used to treat cardiac and circulatory system issues. These diseases include elevated high cholesterol, blood pressure or other fats (lipids) in the blood (hyperlipidemia), and artery hardening (atherosclerosis). Spice foods and drinks including fresh garlic, garlic powder, and garlic oil. Garlic contains a substance known as allicin. This is what seems to make garlic effective under such circumstances. Allicin is also responsible for the odour of garlic”. Some products are "Odorless" when the garlic has been aged, but this method can also make the garlic less effective. Look for supplements that are wrapped (enteric coating) so that they dissolve in the intestine rather than the stomach.

Recent developments in the Food and Nutrition Sciences have highlighted the importance of diet in modulating different physiological functions and, as a result, the human body's health status. “Several epidemiological and clinical studies have found a connection between saturated fat consumption, high blood cholesterol, and an increased risk of coronary heart disease”. CVDs currently account for about 15% of deaths in India, and this number is expected to increase to 40% by 2015 (AIIMS, 2002). Milk fat is known to be more concentrated than PUFA-rich vegetable oils. High blood pressure, coronary heart disease, and a host of other diseases are all linked to excessive fat (saturated) intake.

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A high-fat diet, according to research, decreases the time it takes for blood to clot. As a result, eating a lot of saturated fat increases the chances of getting coronary heart disease. According to nutritionists and scientists, if fat consumption was decreased to below 30% of calories from fats and oils, dietary variables would not have a role in heart disease. Fat has been reduced or replaced in a number of milk products to account for many of these risk factors.

Milk and milk goods contain all of milk's nonfat ingredients. Paneer has been developed using a mixture of skim milk and vegetable oil (Saffola). Saffola oil is a mixture of natural Kardi seeds oil and corn oil of the highest consistency. "Saffola oil has a high concentration of unsaturated fatty acids (PUFA and MUFA). PUFA facilitates cholesterol esterification, lowers low density lipoprotein (LDL) and very low density lipoprotein (VLDL) levels", improves insulin binding potential, and "plays an important role in cholesterol transport".

Objective: Sensory evaluation of prepared experimental value added paneer

Materials and Methods

The experiment "Studies on development of value added paneer with addition of garlic and mint leaf" was conducted at WCDT, SHUATS, Naini, UP.

Procurement and collection of ingredient

1. The raw milk procured from WCDT student training plant, Naini.
2. Garlic paste was procured from authorized vendor of Naini.
3. Mint leaf was purchase from vegetable market of Naini.

Standardization of milk

The raw milk fat and SNF Milk was standardize to 6% and 9%

Table 2: Using Buffalo Milk Garlic, Mint, and Garlic+ Mint, the various parameters of control and test paneer were determined.

Parameter	T ₀	TG ₁	TG ₂	TG ₃	TG ₄	TM ₅	TM ₆	TM ₇	T Ms	TGM ₉	TGM ₁₀	TGM ₁₁	TGM ₁₂
	Garlic					Mint				Garlic + Mint			
	"Organoleptic scores (9 point hedon c scale)"												
Colour and Appearance	7.61	7.78	8.25	6.85	7.78	8.00	8.85	7.98	7.15	7.74	7.25	7.88	7.74
Body and Texture	7.44	7.55	8.22	7.74	7.62	7.11	8.27	7.32	7.74	7.14	7.31	7.88	8.22
Flavour and Taste	7.00	7.30	8.96	7.74	7.36	7.33	8.14	7.96	7.33	7.12	7.77	7.61	7.77
Over all Acceptability	7.34	7.74	8.41	7.12	7.78	7.25	8.16	7.64	7.69	7.74	7.70	7.35	7.39

Sensory Parameters of Control and Preparation of Paneer by using Buffalo Milk and Garlic paste

Color and Appearance

The highest mean Colour and Appearance percent of paneer by using Buffalo Milk, Garlic paste and Mint, the control milk beverage, highest mean Colour and Appearance percent was recorded in T₁₂ (8.06) followed by T₁₁ (8.02), T₉ (7.87) and T₁₀ (7.83).

Body and Texture

The highest mean body and texture percent of paneer by using Buffalo Milk, Garlic paste and mint, the control milk beverage, highest mean body and texture percent was recorded in T₁₁ (7.79) followed by T₁₂ (7.61), T₁₀ (7.58), and T₉ (7.43).

Flavour and Taste: The highest mean flavour and test percent of paneer by using Buffalo Milk, Garlic paste and mint, the control milk beverage, highest mean flavour and test

Treatments

Table 1: Treatments

Treatments	Garlic Paste	Mint Leaf Paste	Garlic: Mint (1:1)
"T0"	"0"	"0"	"0"
"TG1"	"2"	"0"	"0"
"TG2"	"4"	"0"	"0"
"TG3"	"6"	"0"	"0"
"TG4"	"8"	"0"	"0"
"TM5"	"0"	"2"	"0"
"TM6"	"0"	"4"	"0"
"TM7"	"0"	"6"	"0"
"TM8"	"0"	"8"	"0"
"TGM9"	"0"	"0"	"2"
"TGM10"	"0"	"0"	"4"
"TGM11"	"0"	"0"	"6"
"TGM12"	"0"	"0"	"8"

Product Development

Milk was standardized to have a fat content of 6%. "The uniform milk was heated to 85°C for 5 minutes", after which the garlic paste was mixed according to the treatment stage, the milk was cooled to 70°C. The whey was then drained via a strainer made of stainless steel. The coagulum was collected and placed in wooden blocks lined with clean, durable muslin cloth. The blocks were rectangular wooden blocks with holes on one side to help with whey expulsion. This frame was supported by a wooden block and was filled with coagulum before being fitted with another plank. For 15-20 minutes, a 35 kg/cm² pressure was applied to the top of the hoop. The pressed coagulum block was taken out of the hoop, cut into pieces, and placed in cold water for two to three hours. The cooled paneer followed withdrawn from the bath, allowed to drain, and stored at room temperature (32-35°C) before being packed in a polythene bag and stored in the refrigerator (5°C).

Results and Discussion

percent was recorded in T₁₁ (7.82) followed by T₁₂ (7.67), T₁₀ (7.64) and T₉ (7.53).

Overall Acceptability

The highest mean highest Overall Acceptability percent of paneer by using Buffalo Milk and Garlic paste and mint, the control milk beverage, highest mean Overall Acceptability percent was recorded in T₁₀ (8.06) followed by T₉ (7.90), T₁₁ (7.66), and T₁₂ (7.42).

Conclusions

In the present study, milk of buffalo (4.5% fat and 9% SNF) for production of paneer throughout the research of paneer; four level of garlic paste that is 2, 4, 6 and 8 percent and four levels of mint leaf paste viz., 2, 4, 6 and 8 percent was added. The ratio of garlic paste and mint leaf paste [Garlic: Mint (1:1)] viz., 2, 4, 6 and 8 percent was added. The product prepared using 6 percent mint leaf paste in treatment T₆ score

the maximum in sensory parameter that is., flavor, color and outward show and overall acceptability and was considered to be the optimized product. Optimization of product was done by sensory evaluation. Storage study of Paneer was carried out only for the optimized product stored at 5° C and concluded that treatment T6 was acceptable.

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