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Research Article

Traditional techniques and practices in the processing, quality assurance and marketing of sweetmeats and fermented dairy products in some selected areas of Bangladesh

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ABSTRACT

Sweetmeats and fermented dairy items are important socioeconomic components of Bangladeshi culture. The study was aimed to assess the recent scenario of milk-based different sweetmeats traditional manufacturing techniques, practicing quality assurance, their distribution patterns and marketing in Bangladesh. A structured questionnaire was developed and utilized to collect data from local manufacturers of dairy products along with sweetmeat shopkeepers who consider the consumer's demand based on their taste, health and affordability. Face-to-face interviews with 107 local sweetmeat processors were performed in 14 districts from five divisions in Bangladesh and analyzed those data. The findings revealed that dairy product manufacturing was the primary occupation and independent for the sweetmeat shopkeepers (86.67%), most having over 20 years of experience in making and selling the products. With few exceptions, the majority of sweetmeat shops had manufacturing space adjacent to their shops. Raw milk was mainly procured from vendors/middlemen/*goala* (50.47%) followed by directly from local dairy farmers (32.71%), the local market (11.21%), and lowest from their own farms (5.61%). For the production of different dairy sweets, cow milk (100%) was preferred. The products were categorized by 3 major groups namely fermented (mainly *doi*), wet sweets (different types of *rasogolla*) and dry sweets (*sandesh, peda* etc.) Fermented dairy products such as *doi*, along with various sweetmeats, were widely produced, with *doi* and *rasogolla* available in 100% of surveyed shops. Pricing varied based on region, with city areas exhibiting higher costs due to increased demand and production expenses. Quality assurance practices were common to all processors, primarily based on *chhana* yield (100%), with only 26.17% utilizing lactometers to assess the quality. Seasonal variations and special occasions significantly influenced production and sales. Moreover, the qualities of a dairy product were also assessed by hearing from consumer's taste and affordability. The findings highlight both opportunities and constraints in Bangladesh's sweetmeats and fermented dairy sector to facilitating market access and promoting their products locally and nationally.

Introduction

Appropriate and healthy lifestyles are primarily characterized by balanced food consumption pattern. Understanding the daily consumption of milk and milk products in relation to all other food and non-food items, as well as the related factors, is crucial for preparing for a healthy lifestyle. A major segment of agriculture is the dairy sector in Bangladesh plays a pivotal role in ensuring food security, alleviating poverty, and generating employment, particularly in rural communities (Hamid and Hossain, 2014). Traditional dairy products and milk-based sweets play a significant role in Bengali culture, particularly in Bangladesh and integral elements of traditional festivities, hospitality, and daily life across Bangladesh (Shahnaz *et al*., 2004). The kind of milk utilized, customer preferences, and processing factors all have a significant role in the diversity of dairy products produced worldwide (McCarthy *et al.,* 2017). Nowadays, there is a daily rise in the demand for milk

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and dairy products. Dairy consumers' purchasing and consumption patterns are influenced by their income, the cost, and the accessibility of milk and dairy products (Kabir, 2016). A wide variety of traditional sweetmeats, including *chhana*-based and fermented products, are deeply rooted in Bengali history and tradition (Sarkar *et al*., 2023). Among them, sweets like different types of *rasogolla* and *sandesh*, and fermented products such as *doi* (yogurt) and *burhani* (a spicy fermented milk beverage), *matha* and *laban* are especially significant. Fermented and dairy beverages are rich sources of probiotic lactic acid bacteria (LAB), offering potential health benefits (Hossain *et al.,* 2024). Sweetmeat shops are prevalent throughout Bangladesh, with popular items such as *rasogolla, sandesh*, and *rasomalai* (Ahmed *et al.,* 2016; Shahnaz *et al.,* 2004) and *doi (*Alam *et al.,* 2020*)*. The production and consumption of these products are greatly influenced by several factors like raw milk availability, pricing, and seasonal festivals (Ahmed *et al.,* 2016).

Dairying forms the backbone of a diverse value chain that spans from smallholder milk producers to large-scale urban retailers. Dairy businesses in the formal sector are those that were formerly registered, pay taxes, and support the national economy. On the other hand, private unincorporated enterprises in the informal sector are owned by individuals or families and are not recognized as legal entities are also support the economy. In the unorganized sector, milk processing is always questionable in terms of raw material quality, consumable final products and sanitary conditions. However, the local industry faces challenges such as a lack of capital, insufficient storage facilities, and inadequate transportation (Nahar *et al.,* 2022). Despite these obstacles, those dairy sector shows growth potential, with opportunities for value addition and product branding, particularly in milk products (Habib *et al.,* 2022). Moreover, the nutritional benefits of those traditional dairy items are also substantial. Among them fermented products have greater health benefits by improving digestion, reducing cholesterol, boosting the immune system, protecting against infections, cancer, osteoporosis, obesity, diabetes, and lactose intolerance (Tamang and Thapa, 2022; Şanlier *et al.,* 2017). These benefits arise from the presence of probiotics - live beneficial microorganisms introduced during fermentation. The preparation of fermented dairy in Bangladesh typically begins at the grassroots level. The quality of products depends on the quality of raw milk, starter cultures, temperature for bacterial growth, and storage systems, packaging which enhance nutritional value, consistency, and shelf life (Srivastava, 2018; Sionek *et al.,* 2023).

Today's consumers prioritize three key factors: taste, nutrition, and affordability. Furthermore, individuals often concern how or where they get their milk. What kinds of marketing, quality, storage, and packaging techniques will they employ? Despite being the primary players in the dairy industry, not many researches have been done on traditional dairy sweet producers. Despite their widespread popularity, the manufacturing processes, quality control measures, and consumption trends of dairy products in Bangladesh remain insufficiently studied. This article presents a comprehensive field survey examining the current state of sweetmeats and fermented dairy production techniques, practicing quality assurance their distribution patterns, market dynamics and consumer preferences in selected areas of Bangladesh.

Methodology

Questionnaire development

The survey schedule was formulated in alignment with the research objectives to investigate traditional techniques and practices related to the processing, quality assurance, and marketing of sweetmeats and fermented dairy products in selected regions of Bangladesh. A structured questionnaire was developed to address key aspects, including production methods, distribution channels, consumer preferences, and challenges encountered by manufacturers. The survey targeted local manufacturers, retailers, and consumers, aiming to generate insights that could contribute to enhancing market opportunities, improving production efficiency, and guiding policy recommendations.

Period and study areas

The study was carried out over a period of 83 days started from March 20 to June 10, 2023, and covered 107 locations across 14 districts in 5 divisions of Bangladesh (Figure 1). These included five locations in Dhaka, four in Narayanganj, four in Tangail, twelve in Kishoreganj, sixteen in Mymensingh, fifteen in Sherpur, thirteen in Jamalpur, four in Chattogram, four in Laxmipur, four in Noakhali, four in Rajshahi, five in Sirajganj, thirteen in Kurigram, and four in Thakurgaon. The researchers aimed to gather comprehensive data on traditional methods of preparation, ingredients used, and the cultural significance of these foods in local communities. This extensive fieldwork revealed the rich diversity of culinary practices across the regions and emphasized the need to preserve these traditional food processing-technique.

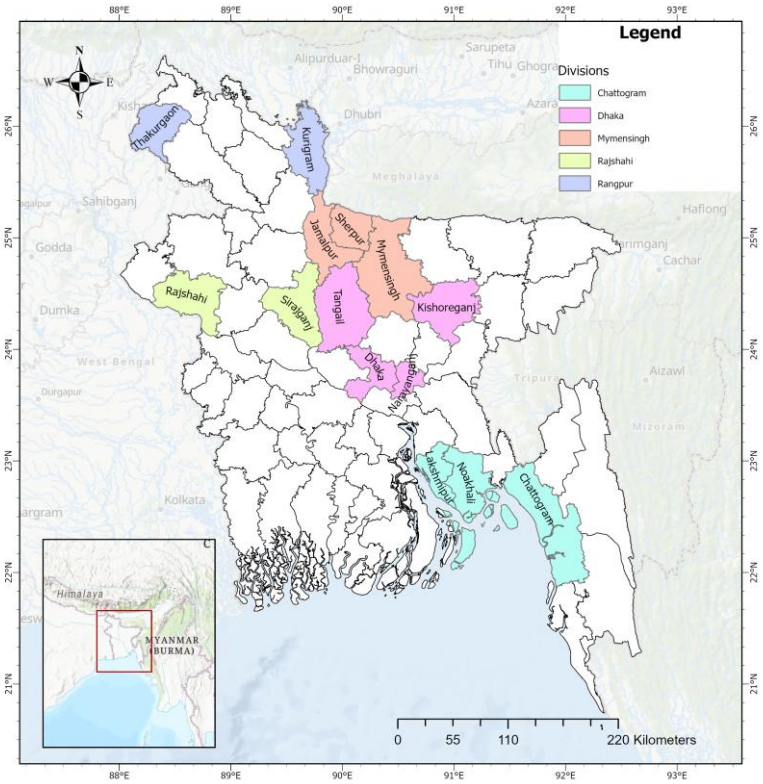

Figure 1: GIS map showing the study area (similar color indicating the division of Bangladesh)

Quantitative data collection

The study employed a structured questionnaire administered through direct interviews. Participants were informed that the research was solely for academic purposes and posed no risk to their daily lives. To ensure data accuracy and reliability, interviews were conducted with care in a friendly and respectful environment, taking into account the attitudes of processors and manufacturers. At the time of the interview, questions were presented systematically and clarified when needed. After the completion of each set of questionnaires, the schedule was reviewed to confirm completeness, and follow-up questions were asked if necessary. Data were initially recorded using local measurement units, which were later converted into standard units. The collected data were then sorted, edited, and coded for analysis.

Data processing and analysis

The quantitative data collected in this study were first processed and carefully sorted in MS Excel to ensure accuracy and internal consistency, after which statistical analyses were performed using IBM SPSS Statistics (Version 22).

Results and Discussion

Occupation and business experience of respondents

The majority of sweetmeat shopkeepers (86.67%) were primarily engaged in dairy product manufacturing as their main occupation. The remaining 13.33% were involved in other professions, such as agriculture. Additionally, most sweetmeat shop owners have been in the business for 20 years or more. Most respondents (38.32%) had expenses of BDT 150000-30000 on raw materials and lower respondents (4.67%) had BDT 700000 expenditure on raw materials (Table 1). Most of the respondents had BDT 50000-100000 Tk. labor cost (36.45%), below BDT 5000 shop fare (40.20%), BDT 4000- 8000 utility cost (36.45%), BDT 2000-3000 depreciation cost (34.58%). Most of the shopkeepers had an income (around 36.67%) of below BDT 200000 from sweetmeat and around 48.60% of respondents had below BDT 10000 from other by-products. This current study also revealed that there were sorts of problems in the industry, storage problems around 62.26%, limitation of space available for sweet preparation, approximately 48.19%, electricity and fuel problems 47.91%, and pest and sanitation control 45.67%.

Table 1: Characteristics of respondents (n = 107)

Parameters	Frequency	Percent (%)
Occupation (types)		
Main	88	86.67
Others	10	13.33
Agriculture	8	11.20
Small business	1	2.13
Expenditure (BDT)		
A. Raw materials cost		
Below 150,000	23	21.50
150,000-300,000	41	38.32
300,000-500,000	24	22.43
500,000-7,00,000	14	13.08
Above 7,00,000	5	4.67
B. Labour cost		
Below 50,000	34	31.77
50,000-100,000	39	36.45
100,000-150,000	19	17.76
150,000-200,000	9	8.41
Above 200,000	6	5.61
C. Shop fare		
Bellow 5,000	43	40.20
5,000-10,000	32	29.90
10,000-15,000	18	16.82
Above15,000	14	13.08
D. Utility cost		
Bellow 4,000	16	14.95
4,000-8,000	39	36.45
8000-12,000	23	21.50
12,000-16,000	16	14.95
Above 16,000	13	12.15
E. Depreciation cost		
Bellow 2,000	20	18.69
2,000-3,000	37	34.58
3000-4000	28	26.17
Above 4,000	22	20.56
Income (BDT)		
A. Sweetmeat		
Below 200,000	48	36.67
200,000-5,00,000	32	30
5,00,000-8,00,000	18	16.66
8,00,000-11,00,000	06	6.67
Above 11,00,000	03	10
B. By-products		
Bellow 10,000	52	48.60

10,000-30,000	37	34.58
30,000-50,000	13	12.15
Above 50,000	5	4.67

Sources and collection practices of raw milk

From this study, it was observed that most of the shopkeepers used milk from cows, around 86.92 % and only a few shopkeepers (13.08 %) used milk from both cows and buffalo (Table 2). The processors of different sweetmeat shops received most of their raw milk from middlemen or *goalas* (50.47%), then farmers (32.71%), milk markets (11.21%) and lowest comes from their own farms (5.6%). There was no preservation technique followed by the sweetmeat shopkeepers due to regular milk receiving.

Table 2: Milk Sources, Types, and Collection Practices for Fermented and Non-Fermented Dairy Products by Sweetmeat Shopkeepers (n = 107)

Parameters	Categories	Frequency	Percent (%)
Milk types	Only Cow	93	86.92
	Buffalo/ Goat	0	0
	Both Cow & Buffalo	14	13.08
	Total	**107**	**100**
Source of milk	Local Farmers	35	32.71
	Goala/ Middleman	54	50.47
	Market	12	11.21
	Own farm	6	05.61
	Total	**107**	**100**
Preservation of raw milk	No	107	100
	Yes	0	0
	Total	**107**	**100**
Frequency of milk receiving	Regular	107	100
	One day pausing	0	0
	Total	**107**	**100**

Dairy product availability and corresponding milk requirements

Bangladesh's dairy sector has grown steadily over the last two decades, yet the country still faces a gap between milk production and demand. In fiscal year 2020–2021, domestic milk production was estimated at about 11.98 million tonnes, against a national requirement of 15.20 million tonnes, leaving a deficit of nearly 3.2 million tonnes (New Age, 2022). Per-capita availability of milk remains between 208 and 222 mL per day, below the World Health Organization's recommended minimum of 250 mL per day (The Business Standard, 2024). A wide range of dairy products is available through both formal and informal channels. The informal sector, which handles around 90% of total milk marketed, dominates the supply of raw and lightly processed milk, while formal processors focus on pasteurized liquid milk, ultra-high-temperature (UHT) milk, yogurt, flavored milk, ice cream, cheese, butter, and condensed milk.

For the convenience of this study, milk products were broadly categorized into three groups: fermented dairy products (primarily yogurt or *Doi*), wet sweets (various types of *Rasogolla*), and dry sweets (peda and para sondesh). A total of 36 different sweet types were documented in current study, as *sada golla, chomchom, rosogolla, sponge rosomalai, kalojam, golapjam, lalmohan, kataribhog, shitabhog, rajbhog, iranibhog, kheermohon/dudhmalai/dudhbhog, malaikari, malaichop, hashikhushi/baby sweets, danadarmisti, chaana, chanarpolao, monda, peda sandesh, para sandesh, pillow sweet, kacha golla, balsuri, kodom, lengcha, pantoya, malaisorai, mouchak, creamjam/kheerbhog, sour doi, sweet doi, cheese, mattha, laban, and ghee*. Among these, *doi* emerged as the most commonly produced dairy item. The findings shown in Table 3 indicated that both *rasogolla* and *doi* were available in 100% of the surveyed sweetmeat shops, while dry sweets were found in 88% of the shops across the study areas. The findings of this study revealed that whole milk was required in the following proportions for the production of each unit: *doi* (27.60%), dry sweets (49.13%), and *rasogolla* (23.27%), as shown in Table 3. These results align with *Tse et al.* (1989), who reported that consumer preferences significantly influence the production status of milk-based products. The expansion of value-added dairy

products had increased the volume of raw milk required because manufacturing losses and product concentration ratios demand higher inputs per unit of finished product. To meet current consumption targets, Bangladesh would need approximately 15–16 million tonnes of milk annually, or a daily per-capita intake at least equal to WHO recommendations (Agri24.tv, 2024). Given this demand, continued efforts to improve farm productivity, establish cold chains, and promote standardized processing practices are critical to ensuring national milk sufficiency and diversifying the dairy product portfolio.

Table 3: Availability and milk required of different types of sweetmeats

Category of sweetmeat	Percentage of available products in shops (%)	Milk required (%)
Fermented Dairy Products (e.g., *doi*)	100	27.60
Different Types of *rasogolla*	100	23.27
Different Types of Dry Sweets	88	49.13

Ingredients and sources used by respondents

Traditional sweetmeat and fermented dairy producers in Bangladesh rely on a combination of locally sourced milk and supplementary ingredients to manufacture their products. A survey of sweetmeat shops in Mymensingh municipality found that approximately 52.6% of respondents procured raw milk directly from nearby farmers, while 47.4% relied on intermediaries or "*goalas*" for their daily supply (*Ahmed et al., 2016*). The primary ingredient across all surveyed products was whole milk, which is converted into *chhana* and subsequently used for a variety of sweets including *rasomalai, rasogolla, kalojam,* and *chomchom*.

Milk and sugar were the primary ingredients used in sweetmeat production. In addition to these, processors commonly incorporate ingredients such as fruit juice, nuts, carrots, flour, oil, low-fat powdered milk, food soda, and coconut. Most of the milk used was sourced from reliable and trusted suppliers, while the other ingredients are generally purchased from the market as needed. The study by Ahmed *et al.* (2016) also documented the proportion of milk allocated to different sweetmeats at the shop level, as *rasomalai* accounted for about 21% of total milk use, followed by *ghee* (18%), *kalojam* (18%), *chomchom* (9%), and *rasogolla* (9%). In addition to milk, respondents reported the regular use of sugar or jaggery as sweeteners, food-grade acids or sour whey for coagulation, and small amounts of flour, starch, and flavoring agents to achieve desired textures and tastes. Most of these supplementary inputs were sourced from local markets rather than through formal contracts, reflecting the largely small-scale and artisanal character of production. This dependence on local raw materials and informal procurement highlights both the deep integration of sweetmeat production within rural supply chains and the difficulties of maintaining consistent quality standards. Some processors also mentioned using low-fat powdered milk and food soda in their formulations, which were likewise purchased from market outlets. Furthermore, energy sources such as gas and fuelwood were reported to be in high demand across these units. Regarding the types of milk used, 89.23% of processors used raw milk, and 58.37% used low-fat powdered milk; no processed milk was reported in use (Figure 2).

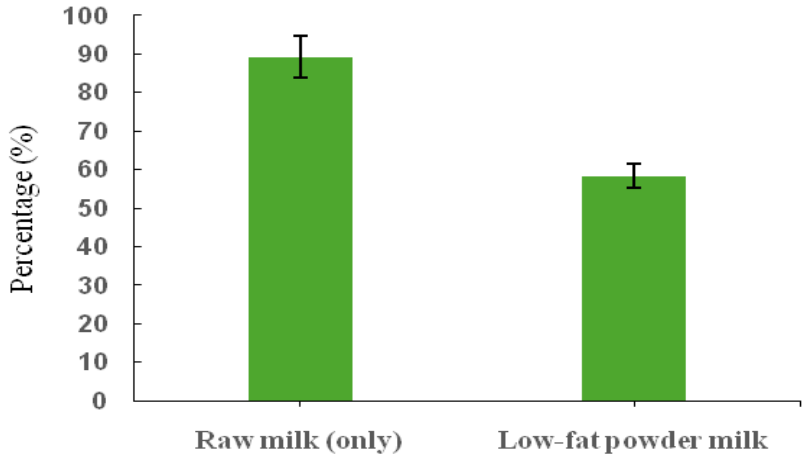

Figure 2: Types of milk used to make dairy products by producers

Sweetmeats and fermented dairy products production practices

Fermentation is a process in which microorganisms decompose complex organic compounds into simpler substances. This transformation brings about specific biochemical changes that create products with distinct chemical and physical properties. It also enriches the nutritional quality of foods by increasing their content of vitamins, proteins, and essential amino acids, while improving sensory attributes such as aroma, appearance, texture, and flavor (Mishra *et al.* 2024). Bangladesh maintains a robust tradition in the production of sweetmeats (*mishti*) and fermented dairy foods, notably *chhana, rasgolla*, and *doi*. Many sweetmeat shops depend entirely on external dairy farms for milk supplies, and most sweets are *chhana*-based (Begum *et al.* 2019). Traditional methods dominate, including acid or heat-coagulation for chhana and use of indigenous starter cultures in *doi*, though there is growing interest in standardized coagulants and improved hygiene practices (Rashid & Miyamoto 2005).

In Bangladesh, for the production of fermented products, the rural producers, 88% rely on traditional fermentation methods utilizing indigenous starter cultures for the making of fermented dairy food preparation, while only 12% have partially adopted modern techniques involving commercial probiotics (Figure 3). In contrast, 71% of urban producers reported using modern starter cultures. These trends align with findings from other studies, which note the continued dominance of traditional fermentation practices in rural areas and a growing shift toward modern starter cultures among urban producers (Tamang *et al.,* 2020; Waché *et al.,* 2018). Regarding temperature control, 79.50% of rural processors employ traditional methods (cloth, blankets, and bamboo baskets), while 21.50% utilize locally made incubators (Table 4). Differences were also observed in the types of fermentation vessels used. A majority of rural producers, around 64% preferred earthenware pots, citing their ability to create favorable microenvironments for fermentation.

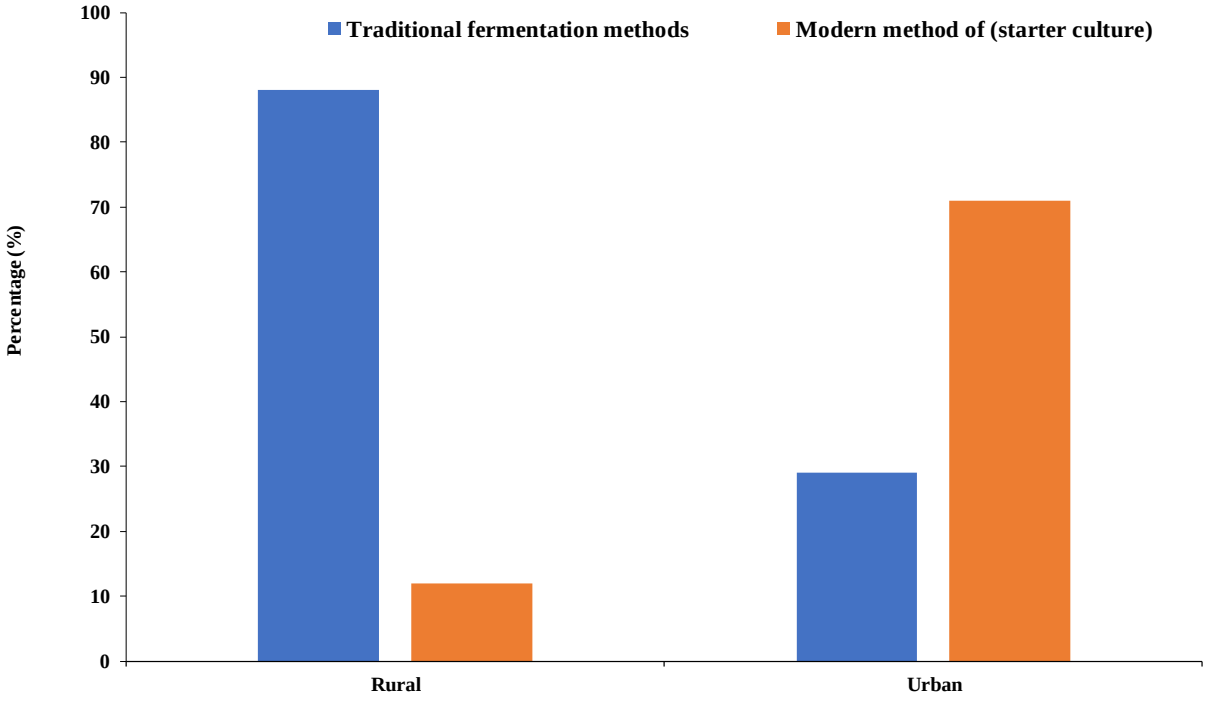

Figure 3: Methods used by the producers to make fermented dairy products

Table 4: Methods used to control temperature during the making of fermented dairy products

Methods	Percentage (%)	Time required to ferment
Traditional methods (cloth, blankets, and bamboo baskets	79.50	One night
Locally made incubators	21.50	Few hours

Quality Assurance

Quality assurance is a key priority in the sweetmeat processing sector, as it directly influences product sales, pricing competitiveness, and customer satisfaction. Most processors strongly focused on maintaining quality by selecting high-grade ingredients, applying proper processing techniques, and consistently using good-quality milk. They also avoided substandard materials and often relied on their own refined methods to produce superior-quality sweets. While all processors (100%) evaluated raw milk quality based on *chhana* yield, formal quality testing remained limited. Only 26.17% of producers reported occasional use of lactometers (Figure 4), and routine laboratory-based assessments were not practiced. This indicates a reliance on traditional indicators rather than standardized testing methods, potentially affecting consistency and product quality. However, formal quality testing of raw milk is limited, with most processors relying on *chhana* yield assessment and only a small percentage using lactometers (Ahmed *et al.,* 2016). Microbial quality varies among different sources, with local vendors' products showing higher bacterial and mold counts compared to private manufacturers and organized dairies (Karthikeyan & Pandiyan, 2013).

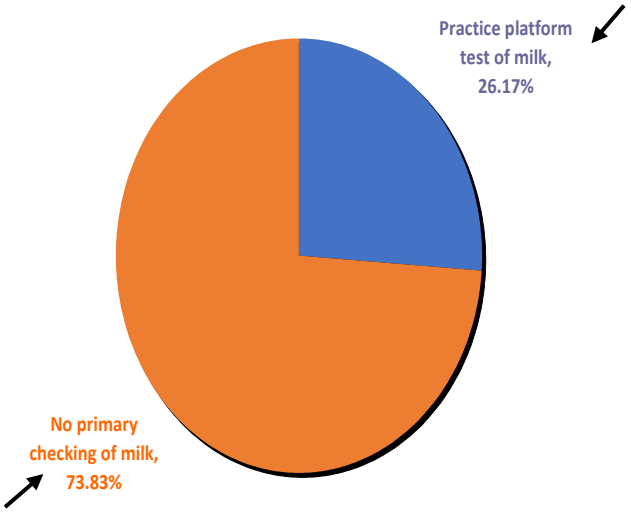

Figure 4: Milk quality test practices used by respondents

Cost of milk and collection time

Milk procurement plays a critical role in maintaining the quality and consistency of sweetmeats and fermented dairy products in Bangladesh. The cost of milk used for producing various dairy products remained consistent across most sweetmeat shops, averaging around 60 BDT per liter. As shown in Table 5, the majority of respondents (100%) reported collecting milk in the morning, which serves as the primary collection time for sweetmeat production. The shopkeepers primarily collect milk in the morning. Supplementary collection occurs in the afternoon (39.25%), while occasional collection is carried out at night (12.15%) (Table 5). This pattern highlights the reliance on fresh morning milk for product quality and indicates a flexible procurement system for meeting additional demand during peak production periods.

The cost of milk varied depending on the source and time of collection. Respondents reported that morning milk considered fresher and more suitable for *chhana* preparation was slightly more expensive than milk collected later in the day. Prices also fluctuated between direct procurement from farmers and intermediary suppliers (*goalas*). This variation in milk price and collection timing influences both production planning and product quality, particularly for perishable items such as *rasomalai*, *rasogolla*, and fermented dairy products.

Table 5: Milk collection time for sweetmeats and fermented dairy Products

Parameter	Frequency	Percent (%)	Remarks
In the morning	107	100.00	Primary collection time
In the afternoon	42	39.25	Supplementary collection
At night	13	12.15	Occasional collection

Packaging, Shelf Life, Storage and Marketing

Shelf life was found to vary significantly based on the type of packaging and storage method employed. Products using traditional packaging exhibited an average shelf life of 2-4 days, whereas those that were vacuum-sealed and refrigerated maintained an extended shelf life of 7-10 days (Table 6). However, producers targeting urban markets were increasingly shifting toward modern packaging solutions, with 22% utilizing vacuum-sealed containers and 14% opting for plastic cups with foil seals. The urban producers favored stainless steel and food-grade plastic containers due to their hygiene benefits and durability. Climate conditions and local practices were identified as significant factors influencing fermentation processes, with implications for microbial quality and safety, as highlighted in a separate study (Chandran & Beena, 2024). Similar findings have been reported in other studies, where traditional packaging remains common, particularly in rural settings, while urban producers increasingly adopt modern alternatives such as vacuum-sealing (Kefale *et al.,* 2025).

Table 6: Packaging, shelf Life, and storage practices among producers

Category	Packaging Method	Usage (%)	Shelf life	Cold Storage Access
Traditional Methods	Clay pots, plastic tubs	64%	2–4 days	Limited (18% rural)
Modern Methods	Vacuum-sealed containers	22%	7–10 days (if refrigerated)	Higher in urban areas
	Plastic cups with foil seals	14%	7–10 days (if refrigerated)	Higher in urban areas
Storage Condition	Non-refrigerated	Common (rural)	2–4 days	Limited availability
	Refrigerated	Urban-focused	7–10 days	Better in urban markets

Studies have shown that both packaging material and storage temperature are critical factors influencing product stability, with refrigerated glass bottles offering the longest shelf life for some products (Kefale *et al.,* 2025; Amanda *et al.,* 2019). Despite these benefits, access to cold storage remains limited, with only 18% of rural producers reporting availability of such facilities. This disparity underscores the challenges faced by rural producers in adopting modern packaging and storage technologies. In this study, most of the respondents (70.09%) used 4^{o}C storage temperature for storage of fermented products, around 64.68% of shopkeepers stored the products up to sell (Table 7). Most of the respondents (59.81%) store the fermented products with other food products. Survey results highlight contrasting marketing approaches between urban and rural retailers. In urban areas, 62% of sellers use supermarkets and online platforms, meeting consumer demand for convenience and branded probiotic products (not provided). Rural retailers, however, depend on traditional local markets due to limited digital access and cost-sensitive buyers. Enhancing e-commerce and cold-chain logistics in rural regions could improve market access and promote traditional fermented dairy foods more widely.

Table 7: Storage temperature, time and storage system used by the respondents for the sale of fermented products

Parameters	Categories	Frequency	Percent (%)
Storage temperature	4˚C	75	70.09
	-20˚C	32	29.91
Storage Time	One day	17	15.88
	Two days	21	19.62
	Up to sale	69	64.68
Storage system	In a Single way	43	40.19
	With other products	64	59.81

Consumer preferences

Consumer preferences significantly influence the production of various dairy products. Survey data revealed that 92% of respondents prioritized traditional taste, followed by health benefits (65%) and affordability (58%) (Table 8). Urban consumers favored products labeled “probiotic” or “organic,” whereas rural consumers focused on cost and accessibility. Branding and packaging were important to 46% of urban buyers compared to 19% in rural areas. As information access and product diversity expand, consumer decision-making tends to be guided more by brand image than by individual product characteristics (Anand &Shachar, 2000).

Table 8: Consumer Preferences

Taste	Respondents (%)
Traditional taste	92 (Health benefit 65%, affordability 58%)
Others	8
Want branding and packaging	
Urban	46
Rural	19

Conclusion

This study conducted traditional approaches to processing, quality assurance, and marketing of sweetmeats and fermented dairy products of four different divisions in Bangladesh. Findings show that rural producers still rely on conventional milk sourcing, fermentation, and packaging methods, while urban processors are gradually adopting modern starter cultures, hygienic containers, and advanced marketing strategies. Quality assurance is mostly informal, based on traditional practices specially organoleptics evaluation and consumer's comments only rather than official and standardized tests. Consumer demand strongly influences production, rural buyers value taste and affordability, whereas urban consumers prefer branded, probiotic products. Strengthening rural infrastructure through affordable cold storage, training on quality testing, and support for digital market access could improve product safety, enhance consumer trust, and ensure sustainable growth of the sweetmeats and fermented dairy sector in Bangladesh.

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