

## Study on Sweetmeat Processing in Bangladesh

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### -----ABSTRACT-----

*This study and was conducted at six places over a period of two months started from November, 2012 to December, 2012. The study was concentrated in four areas, a divisional city, a capital city, two small towns and a village. The main objective of this study was to know the present status of sweetmeat processing in Bangladesh and what are problems were they faced. Three types of respondents were selected randomly. Both male and female were considered for the interview. The respondents were interviewed with the structured guided questionnaire in relation to sweetmeat processing, quality & marketing issues. Both dry and wet sweets were produced by the processors. Milk, sugar and flour is the common ingredients for making sweets. In few cases the processors were used food soda, powder milk, Mao milk and red sugar in processing. Respondents were opined that quality is main concern for these industries. They were maintaining quality by using quality ingredients, adopting appropriate technology and deploying them in the process. Two defined sources were recognized by the respondent mostly suppliers and markets are the common sources of ingredients. Peoples were very much fond of and love to eat Chomchom, Rosogolla, Black berry, and yogurt. Few problems were recognized by the respondents of which breaking of sweets, shape is not appropriate and sweets were become hardy. If the perceived problems could be solved by addressing quality inputs, avoiding chemicals and ensuring sound working environment the sector would be healthier in future.*

**KEY WORDS:** areas, locations, seller, manufacturer, consumer, consumer's choice.

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### I. INTRODUCTION

Sweetmeat means a food rich in sugar with milk. In this world it is too difficult to find a man who is not like sweets. Almost same scenario found in Bangladesh. Bangladeshis (Bengalis) are also like to eat milk made sweets. In Bengalis daily life without milk made sweets no festivals can be celebrated. For that reason sweets shops are almost found everywhere in Bangladesh. A huge number of milk made sweetmeat industries established to fulfill the demand of mass people in Bangladeshis. These sweetmeat industries produced hundreds of items around Bangladesh. In Bangladesh sweets are divided in four categories; such as- dry sweet, wet sweet, yogurt and others. Mostly common named sweets are likely Rosogolla, Blackjam, Yogurt, Chomchom etc. Like milk, yoghurt is a healthy and delicious food due to its high nutritive and therapeutic value [1]. Apart from sweets and plain yogurt, preparation of fruit yoghurt has been investigated by a number of researchers in different parts of world [2] and [3]. But in Bangladesh no research work has yet been done on the manufacture of dahi incorporating strawberry, orange and grape juice. Most of the people are buying sweets and other produces made of milk depends on their taste, nutrition and prices. These sectors are contributing a lot in the country's economy. It is also adding value chain with the milk producer to retail markets and consumers. Per day, one big amount of currency exchanged in the sweetmeat industry related sectors. Large number of people involved in this sector. For these reasons it is needed to know the proper condition of this sector. This is the reason there is urgent need of study on this sweetmeat industry to gather information. Milk is converted to various products. Yoghurt is one of them locally called *Dahi*. About 4% of the total milk produced in Bangladesh is used for the preparation of Dahl [4]. Histories are shown that Bengalis are always loved to eat sweets. Present situation are also same that. Now a day's sweet shops are found in everywhere of Bangladesh including the cities, towns and also villages. Presently Sweet making industries are also one of the well-known industries. So it is necessary to know the present situation of sweets and related problems.

This survey is need for giving emphasis of the sweet making process, ingredients names, daily & monthly demand of sweets, consumer/buyers choice, highest selling sweet categories and also related problems of sweet making in Bangladesh. The main objective of this study is to know the present status of sweetmeat processing in Bangladesh. The other objectives are to: i) know the types of sweets available in the market; ii) know consumer's preference on sweet products; iii) list down ingredients of sweets with sources; iv) find out problems related to sweet meat processing; v) know the demand and supply of sweetmeats; vi) know the economics of sweet processing; vii) know the status of daily unsold sweets and their uses; viii) know the status of waste sweets and inputs; and ix) recommend the solutions to overcome the problems

## II. METHODOLOGY

This is basically survey type of study. The study was conducted over a period of two months started from November 2012 and ended by December 2012. The study was concentrated at six places one from Rajshahi city, one from Dhaka city, one from Dhamrai, two from Sathuria and one from Savar to get details about the sweetmeats processing. The survey was carried out with help of guided questionnaire and person to person dialogue. Both male and female were interviewed to know the common perception about sweetmeat processing. The study areas were typically characterized by many types of people in relation to religion but similarity to educational status, occupation and many of their products. The respondents were categorized in the following manner: a) Owner/Manager/Seller, b) Manufacturer/Worker; and c) Consumer/Customer/Buyer. Total 32 questions were asked in response to respondent category of whom 19 questions for owner/manager/seller, 8 questions for manufacturer/worker and 5 questions for consumer/customer/Buyer.

## III. RESULTS

### 3.1 Study area, location and places of Sweetmeat Processor

Two processor were selected from city areas one from Dhaka city and another from Rajshahi city to get diverse information from different location in relation to culture and geographical locations. In addition, four Upazilas were selected to get ins and outs on sweetmeat processing and other drivers (table 1). Total six shops were selected namely Rana Foods and Pasty Shop, Rajshahi Mistanno Vandar, Suresh Mistanno Vandar, Loknath Mistanno Vandar, Three Brothers Mistanno Vandar and Prohollad Mistanno Vandar.

**Table 1 detail on study location**

Area	Location	Name of the processors
Capital City	Dhaka City	Rana Foods and Pasty Shop
Divisional City	Rajshahi City	Rajshahi Mistanno Vandar
Small Town	1. Savar	Suresh Mistanno Vandar
	2. Dhamrai	Lokhnath Mistanno Vandar
Village	1) Sathuria	Three Brothers Mistanno Vandar
	2) Sathuria	Prohollad Mistanno Vandar

### 3.2.Product diversity

A wide range of sweets were produced by the processor including dry sweets, wet sweets and yogurt. Corresponding data (table 2) Rana Foods and Pasty shop were processed and sold 33 varieties of sweet followed by Rajshahi Mistanno Vandar, Suresh Mistanno Vandar, Loknath Mistanno Vandar, Prohollad Mistanno Vandar and Three Brothers Mistanno Vandar respectively. The results were indicated that Dhaka city demonstrated more diverse varieties of sweets. This is due to huge population and more demand of diverse types of sweets. The top most demand of wet sweets in respect to all locations and respondent's choices. Three Brothers and Prohollad Mistanno Vandar never produce or sale yogurt.

**Table 2 Product diversity**

Category	Area and locations of the processor					
	Dhaka city	Rajshahi city	Savar	Dhamrai	Saturia	
	Rana Foods and Pasty Shop	Rajshahi Mistanno Vandar	Suresh Mistanno Vandar	Lokhnath Mistanno Vandar	Three Brothers Mistanno Vandar	Prohollad Mistanno Vandar
Dry sweet	10	03	02	02	00	01
Wet sweet	18	12	08	07	04	07
Yogurt	05	01	01	01	00	00
All	33	16	11	10	04	08

### 3.3 Products and their sale prices

Total 57 types of sweets were listed under this study (Table 3). Rana Foods and Pasty shop demonstrated the highest sale price in their product list. Cream juice and Muli Testi were sold at BDT500 per kilo where as Rajshahi Mistanno Vandar was sold Pillow sweet, Pantoya, Dhodia and Juice zilapi at BDT 280 per kilo. Prohollad Mistanno Vandar was sold special juice swondesh at BDT 450 per kilo. The price in the top most categories were Cream juice, Muli Testi, Malaisorai, Tophy, Iranivog, special juice sondesh, Kodom and kacha chhana.

**Table 3 product list with sale prices**

Category	List of products with price (BDT/Kg) or unit price					
	Dhaka city	Rajshahi city	Savar	Dhamrai	Saturia	
	Rana Foods and Pasty Shop	Rajshahi Mistanno Vandar	Suresh Mistanno Vandar	Lokhnath Mistanno Vandar	Three Brothers Mistanno Vandar	Prohollad Mistanno Vandar
Yogurt special	250					
Sweet yogurt	230					
Yogurt normal	180	110	150	140		
Cup yogurt	25					
Sour yogurt	80					
Cream juice	500	240		300		240
Sponge rosomalai	240					
Sondesh	400					
Mochak	350					
Rosogolla	220	160		200	200	
Kacha Golla	400	240				
Lalmohon	220	220				
Black jam	220	200	160	140		160
Juice tost	350					
Maoya laddu	220					
Moti laddu	220					
Kacha chana	400					
Muli testi	500					
Hafsi	400					
Berryjam	300					
Cream jam	300					
Malaisorai	500					
Balusai	200					
Net sweet	250					
Cream tost	350					
Chomchom	300	200		120	160	
Iranivog	450					
Carrot barfi	300					
Monshur	250					

Topy	500					
Kodom	400					
Bundiya	200					
Baby sweet	280					
Katari vog		260				
Bubdia		100				
Para sondesh		110				
Juice sondesh		260				
Orange sweet		200				
Pillow sweet		280				
Pantoya		280				
Dodhia		280				
Juice jilapi		280				
Small chomchom			150			140
Big chomchom			250			
Big rosogolla			180		260	180
Small rosogolla			150			160
Dander sweet			180			
Coconut balusai			250			
Amitti			150			
Jilapi			100			
Laddu			120			
Special chomchom				160	200	190
White sondesh				180		
Satta sondesh				160		
Normal Juice sondesh				250		160
Special Juice sondesh				310		450

### 3.4 Name of ingredients & Sources

Milk and sugar is the common ingredients for sweetmeat processing. In addition, juice, nut, carrot, flour, oil, powder milk, Mao milk, food soda, coconut and red sugar are randomly used in these industries (Table 4). Gas, fuel wood and electricity are the immense need for the processing industries. Mostly milk was collected from well defined source especially from trusted suppliers. Rest of the ingredients were collected or bought from the market on demand. In few cases, food soda, Mao milk and powder milk were purchased from the market. Except Rana Foods and Pasty Shop and Rajshahi Mistanno Vandar the processors from study areas were used food soda in sweetmeat processing. On the otherhand, Rana Foods and Pasty Shop and Rajshahi Mistanno Vandar were using powder milk intensively.

**Table 4 Name of ingredients with sources**

Ingredients	Area and locations of the processor					
	Dhaka city	Rajshahi city	Savar	Dhamrai	Saturia	
	Rana Foods and Pasty Shop	Rajshahi Mistanno Vandar	Suresh Mistanno Vandar	Lokhnath Mistanno Vandar	Three Brothers Mistanno Vandar	Prohollad Mistanno Vandar
Milk	Milk supplier	Supplier	Supplier	Supplier	Supplier	Supplier
Juice	Market	Market			Market	Market
Sugar	Market	Market	Market	Market	Market	Market
Red Sugar	Market	Market	Market	Market	Market	Market
Nut	Market					
Carrot	Market					
Flour	Market	Market	Market	Market	Market	Market

Oil	Market	Market	Market	Market	Market	Market
Powder milk	Market	Market				
Wood/fuel	Market	Market	Market	Market	Market	Market
Mao milk						Market
Food soda			Market	Market	Market	Market
Gas				Market		
Coconut		Market				

**3.5 Quality Assurance:** Quality is the prime concern in the sweetmeat processing industries. High level of customer, good price and most sales can be ensured by managing good quality. Most of the processors were concerned about the quality assurance. They were managed quality by using good quality ingredients, adopting appropriate processing methods, using good quality of milk, avoiding inferior quality of ingredients and incorporating own processing method in preparing good quality sweets for the consumers (Table 5).

**Table 5 quality management**

Quality indicators	Area and locations of the processor					
	Dhaka city	Rajshahi city	Savar	Dhamrai	Saturia	
	Rana Foods and Pasty Shop	Rajshahi Mistanno Vandar	Suresh Mistanno Vandar	Lokhnath Mistanno Vandar	Three Brothers Mistanno Vandar	Prohollad Mistanno Vandar
Using good quality ingredients	Using good quality ingredients	Using good quality ingredients		Using good quality ingredients		Using good quality ingredients
Adopting appropriate processing method	Adopting appropriate processing method	Adopting appropriate processing method	Adopting appropriate processing method	Adopting appropriate processing method	Adopting appropriate processing method	Adopting appropriate processing method
Using good quality milk		Using good quality milk				
Own process						Own process
Avoiding inferior ingredients			Avoiding inferior ingredients			

**3.6 Customer care and supply:** All of the processors were concerned about the customer’s satisfaction. In running business they were paying more attention for customer care through managing satisfaction level including quality assurance and timely supply of order. They were considered following factors for customer care: i) quantity ordered; ii) frequency of order and iii) mode and timely payment (Table 6).

**Table 6 Factors in supply**

Supply depending factors	Area and locations of the processor					
	Dhaka city	Rajshahi city	Savar	Dhamrai	Saturia	
	Rana Foods and Pasty Shop	Rajshahi Mistanno Vandar	Suresh Mistanno Vandar	Lokhnath Mistanno Vandar	Three Brothers Mistanno Vandar	Prohollad Mistanno Vandar
Quantity ordered	Quantity ordered	Quantity ordered	Quantity ordered	Quantity ordered	Quantity ordered	Quantity ordered
Frequency of order	Frequency of order	Frequency of order	Frequency of order	Frequency of order	Frequency of order	Frequency of order
Payment		Payment	Payment	Payment		Payment

**3.7 Workers in the processing unit:** Mainly paid workers were worked in the sweetmeat processing industries. To ensure the best quality the processors were engaged them for high quality refinement. On an average 15 workers were engaged with the minimum 14 and maximum 16 person in Rana Foods and Pasty Shop (Table 7). On the other hand, average 3 persons were working Three Brothers Mistanno Vandar. This study was also indicated that the city area were employed more workers than semi urban areas.

**Table 7 labor involvement in the processing unit**

Worker type	Area and locations of the processor					
	Dhaka city	Rajshahi city	Savar	Dhamrai	Saturia	
	Rana Foods and Pasty Shop	Rajshahi Mistanno Vandar	Suresh Mistanno Vandar	Lokhnath Mistanno Vandar	Three Brothers Mistanno Vandar	Prohollad Mistanno Vandar
Worker	15(14-16)	12(8-14)	3(2-4)	3(2-4)	2(2-3)	3(2-4)
Own		1	1	1	1	1
All	15(14-16)	13(8-14)	4(2-4)	4(2-4)	3(2-3)	4(2-4)

**3.8 Production cost and sales status of the products**

The production cost is highly associated with the quality and people involved with the process. The highest sales quantities were reported by Rana Foods and Pasty shop were 125kgs/day (Table 8). The highest selling sweets were Lalmohan and cream Jam, Rosogolla and Chomchom. The reasons for high sales were due to good taste, high quality and reasonable prices.

**Table 8 sales status of sweets**

Factors	Area and locations of the processor					
	Dhaka city	Rajshahi city	Savar	Dhamrai	Saturia	
	Rana Foods and Pasty Shop	Rajshahi Mistanno Vandar	Suresh Mistanno Vandar	Lokhnath Mistanno Vandar	Three Brothers Mistanno Vandar	Prohollad Mistanno Vandar
Production cost	NC	NC	100-240	NC	NC	110-160
Highest selling quantity	125Kgs	100 Kgs	20 Kgs	25Kgs	10 Kgs	40 Kgs
Highest selling sweets	Lalmohan & Cream jam	Rosogolla	Rosogolla	Chomchom	Chomchom	Chomchom
Type/category of sweets	Wet sweet	Wet	Wet	Wet	Wet	Wet
Reasons for more selling	Taste & quality	High quality & demand	High demand	Quality & reasonable price	Reasonable price	High quality

**3.9 Special Day's sweets and unsold sweets**

Few special days were observed by the nation including Bengali New Year, English New Year, Independence Day, Eid and other religious festivals. In few occasion including the day of Board Examination Result publication in Primary School Certificate (PSC), Junior School Certificate (JSC), Secondary School Certificate (SSC) and Higher Secondary School Certificate (HSC). In the above mentioned days the processors were produced extra sweets in addition to their regular production (Table 9). They were usually disposed unsold sweets as wastes in the bin for maintaining the quality of sweets.

**Table 9 uses of Special day sweets**

Sweets	Area and locations of the processor					
	Dhaka city	Rajshahi city	Savar	Dhamrai	Saturia	
	Rana Foods and	Rajshahi Mistanno	Suresh Mistanno	Lokhnath Mistanno	Three Brothers	Prohollad Mistanno

	Pasty Shop	Vandar	Vandar	Vandar	Mistanno Vandar	Vandar
Quantity of special day extra sweets/day	130 Kgs	80Kgs	No extra made	20 Kgs	20 Kgs	60Kgs
Quantity of unsold sweets/day	20 Kgs	20 Kgs	5 Kgs	5 Kgs	5 kgs	10 Kgs
Uses of unsold sweets	Dispose as waste in the bin	Dispose as waste in the bin	Dispose as waste in the outside	Dispose as waste	Dispose as waste	Dispose as waste

### 3.10 Payment & working environment

Respondents were opined several opinions regarding payment and working environment. Sometimes they were got payment in timely manner and sometimes they received in late or irregularly (Table 10). Rana Foods and Pasty shop, Three Brothers Mistanno Vandar and Prohollad Mistanno Vandar were paid regular in timely manner. Rajshahi Mistanno Vandar, Suresh Mistanno Vandar and Loknath Mistanno Vandar were used slang language in case of any wrong or mistake.

Table 10 payment & working environment

Name of the processors	Payment schedule timely	Punishment/using slang words for mitakes
Rana Foods and Pasty Shop	Yes	No
Rajshahi Mistanno Vandar	Yes, sometimes late given.	Only using slang words
Suresh Mistanno Vandar	Not all time	Using slang words
Lokhnath Mistanno Vandar	Sometimes late given.	Using slang words
Three Brothers Mistanno Vandar	Yes	No
Prohollad Mistanno Vandar	Yes	No

### 3.11 Problems of sweetmeat processors

Several problems were reported by the respondents (Table 11). The common problems including shape is not good, break down of sweets, sweets become hardy, and break down of raw sweets were reported from the processors.

Table 11 problems of sweet processing

Problems	Area and locations of the processor					
	Dhaka city	Rajshahi city	Savar	Dhamrai	Saturia	
	Rana Foods and Pasty Shop	Rajshahi Mistanno Vandar	Suresh Mistanno Vandar	Lokhnath Mistanno Vandar	Three Brothers Mistanno Vandar	Prohollad Mistanno Vandar
Sweet is not in good shape	Sweet is not in good shape	Sweet is not in good shape				
Sweet breakdown			Sweet breakdown			Sweet breakdown
Break down of raw sweets	Break down of raw sweets			Break down of raw sweets		Break down of raw sweets
Become hardy	Become hardy	Become hardy			Become hardy	Become hardy

#### IV. DISCUSSION

As per study the respondents were opined the benefits of sweet meats in the daily dishes. Not only is that it also essential for the human health. Venkateshaiah *et al.* [5] reported that higher levels of fat and SNF improved the body of Dahi. Similarly Bozanic *et al.* [6] prepared yoghurt from goat milk and cow milk. Both of them reported that yoghurt samples prepared from goat milk had a softer consistency and lower viscosity than those prepared from cow milk. Duitschaever [7] reported that in his study a 32% consumers gave preference for goat milk Dahi and 68% preferred cow milk Dahi. Very few field surveys occurred in the sweetmeat making industries in Bangladesh. So that enough number of information has not found in this topic. Maximum sweets owners/sellers explain that they are making sweets in a good way and also healthier way. But it not is 100% ensured by anyone. Everyone ensured that paying money of sweet makers always given in time. Government doesn't give any financial support to them and some of shop owners don't want government supports because of their painful systems. They explained their problems of making sweets and others, their benefits, sources of ingredients, shop's sweets items, sweets names and prices, daily and monthly sold sweets, amount of daily made sweets, amount of daily unsold sweets, and uses of waste sweets.

Several authors reported on yogurt but no specific study was found on sweetmeats. Good quality yoghurt should be smooth, glossy surface, no crakes or holes on the top of dahi, no whey syneresis, no off flavor or odor, clean layer on the surface of dahi [8]. Dahi or yoghurt is generally considered as a safer product and its unique flavour appeals to so many that consideration is being, given by nutritionists to incorporate inexpensive source of nutrients to make it an almost complete food [9]. On the other hand, sweets are the common foods overall in Bangladesh. The people from rural village to urban were habituated with sweetmeat products. Common problems were recognized by the respondents of which lack quality milk and appropriate processing technology are the main hindrance in this sector. A remarkable contribution is possible to the country's economy, if the perceived problems could be solved.

#### V. CONCLUSION AND RECOMMENDATIONS

The people of Bangladesh are fond of sweets. Bengalis are always loved to eat sweets. So everywhere in Bangladesh people are eating it, making it, selling it and buying it. This sector will rise in future if the government provides support for financial solvency, market opportunity and trained them for quality control and appropriate processing. Some of recommendations should be enforced at three levels. It should be given a way to improve the conditions.

##### 5.1 Policy level:

- Amendment and reinforcement of food law (sweetmeats)
- Need to undertake motivational program for the manufacturer and the seller.
- Creating public awareness

##### 5.2 Action level:

- Maintaining the healthier way to make sweets.
- Don't use any chemical that causes harm to health.
- Always ensure the good quality of sweets.

##### 5.3 Research level:

- Need more details study on sweetmeat processing.
- Need more study on problems and prospect of sweetmeat processing in Bangladesh

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