

CODEX ALIMENTARIUS COMMISSION



Food and Agriculture
Organization of the
United Nations



World Health
Organization

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Agenda Item 14

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JOINT FAO/WHO FOOD STANDARDS PROGRAMME

FAO/WHO COORDINATING COMMITTEE FOR ASIA

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Goa, India 23 - 27 September 2019

Other Business

Discussion Paper for Development of a Codex Standard for Traditional Dairy Based Sweets

(Prepared by India)

BACKGROUND

At the 21st Session of Codex Committee, India propose to start new work on a standard for Traditional dairy Based Sweets. Milk plays a significant role as a source of animal protein in the average Indian diet which is predominantly vegetarian. Because of higher ambient temperatures prevailing in Indian sub-continent, ancient Indians developed more stable products from milk for conservation of its nutritional goodness. So, the ethnic dairy foods, commonly termed as traditional or Indian **indigenous milk products**, were developed over ages utilizing locally available equipment, utensils and manufacturing procedures. Traditional dairy based sweets based on khoa containing all the milk solids which is good in protein, minerals and energy giving fat and lactose.

INTRODUCTION

Traditional dairy based Sweets, also called ***mithai*** a significant element in Indian cuisines. The traditional dairy based sweets are integral part of Indian Heritage. Of great social, cultural and economic importance, these products have been developed over a long period. Traditional Indian Dairy products are those products which are known in this country for ages.

For better understanding of the nature of the products, indigenous milk products can be conveniently classified as below:

a. Sweets made from Concentrated / partially desiccated products

In this class of products, milk is concentrated using heat energy. Moisture percent in milk gets reduced due to evaporation. Based on extent of heat treatment product characteristics such as smell, colour, aroma and texture imparted to the products.

- 1) Khoa based sweets- Khoa is an indigenous milk product prepared by concentration of milk and is widely used in India and in neighboring countries as a base material for preparation of numerous sweets like **peda, burfi, milk cake, gulabjamun** etc.
- 2) Basundi / Rabri / Kheer

b. Sweets made from heat & acid coagulated milk products- Coagulated products are obtained upon addition of acidulant(s) to heated milk and extent of removal of moisture controls their texture. Products include Paneer and Chhana. Sweets made from chhana include ***Rasgulla, Rasmalai*** etc.

NEED FOR DEVELOPMENT OF CODEX STANDARDS FOR TRADITIONAL DAIRY BASED SWEETS (TDBS)

- Traditional Indian Dairy products are having strong foothold not only in Indian market but also having a great export potential because of presence of Indian diaspora across the globe.
- Even today many codex standards are there for Indian traditional dairy based products like Curd (*Dahi*), concentrated milk (*shrikhand*), dairy based fermented drinks (*chaach, lassi* etc.). Similarly, we are proposing the standards for Indian TDBS in Codex.

- Cause of large variations in the samples available in the market is due to non – existence of any regulatory standards worldwide.
- Major problem encountered in traditional dairy product is rampant adulteration, especially during the festive seasons. During festive seasons the demand for milk and milk-based sweets increase dramatically creating a huge supply demand gap. The festival season sales in many areas account for 30 to 40 per cent of the annual sales of traditional milk-based sweets.
- In order to meet the increased demand, traditional product manufacturers often resort to addition of cheaper and inferior quality ingredients as substitute for milk solids. The problem also aggravates due to the dominance of middlemen, who supply raw milk to the traditional product manufacturers. Due to absence of stringent product and additive standards, contaminants standards and formal quality control system in the whole chain, the adulteration goes unchecked.
- With the understanding of the evolution of organized dairying, relevance of traditional dairy products in the context of Indian dairying, technology and economics of traditional dairy products, market of such products in both domestic and international level has shown a remarkable increase from past few years.
- The organized dairy sector has a 100 per cent share in western milk products market. Though the organized sector has entered the market of indigenous milk products like shrikhand and gulabjamun, these markets are mostly controlled by unorganized sector.
- There are more than one hundred and fifty milk based indigenous products available in India and milk produced more than the daily requirements for direct consumption was traditionally converted into various dairy products with a longer shelf life and thus the different methods of preservation of milk began.
- The products being developed are made following age-old methods of preservation and conservation through heat desiccation, fermentation, coagulation and clarification. The aim is to recover the maximum output through tiny scale or household level processes and technologies that are adequate and appropriate to local situations, resources and food habits.
- The unorganized dairy sector comprises numerous, small and/or seasonal milk producers/traders (popularly known as '*halwai*'). They are involved in selling mainly indigenous milk products like *peda*, *barfi*, *rasgolla*, *khoa*, etc., usually at the local level, but have a major share in these milk products. The traditional milk products have very high palatable characteristics and nutritional profile and uniformity of quality of product in such operations is dependent solely on the skill of the *halwais*.
- Quality control measures are seldom exercised and the keeping quality of the product is generally poor. The small-scale operations are associated with inefficient use of energy, fatigue of operators, poor hygiene and sanitation and non-uniform product quality, little or no packaging and labelling for protection and communication of nutritional quality and shelf life. The equipment's used in traditional methods of manufacturing indigenous dairy products have poor hygienic design and labour intensive.
- But the main problem in the development of sweets from unorganized sector is the quality, which creates a serious threat to the health of consumers. Unhygienic production conditions, substandard processing equipment, improper use of veterinary drugs, and the improper handling, storage and transport of milk contribute to the poor quality of traditional milk products in the unorganized sector. Therefore, there is a need for the development of standards for monitoring the quality and composition of these products without compromising consumers interest.

DAIRY BASED SWEETS PRODUCTION VOLUME

Over the last few years India has emerged as one of the major exporters of Indian Sweets. Annual milk production in India is approximately **176 million tons**. Nearly half of the milk produced in India (**50-55%**) is utilized for the manufacture of traditional dairy based sweets / products and approximately 40-45% is used as fluid milk. Only about 20% of the total milk produced is processed by the organized dairy sector. A large proportion of the milk is converted into indigenous dairy products such as khoa & milk-based sweets.

Traditional products account for over 40% of all dairy products consumed in the country. Although authentic statistical data are not available, it is estimated that the value of Khoa and chhana based sweets if put together would be more than **Rs.100, 000 million(Rs. 10000 Cr)**which is double the value of

milk handled by the organized dairy sector. An optimistic demand profile-consumption likely to grow at an annual rate **more than 20%**.

Table1: Market Size of Traditional Dairy Based Products

Type of products	End products	Estimated market size (Rs. in billion)
<i>Chhana</i> - based sweets	<i>Rasogolla, rasmalai, cham-cham, chhana murki, rajbhog</i> etc.	520
<i>Concentrated Milk based/Khoa</i> -based sweets	<i>Burfi, peda, gulabjamun, kalakand, Milk cake, Kulfi, rabri, basundi</i> etc.	

A major market for Indian milk-based sweets is developing overseas. The Indian migration presents an exciting avenue for globalization of sweetmeats (Rao & Raju, 2003; Patil, 2011). In North America alone, this market is estimated at **US\$ 500 million (INR 3500 Cr.)** (Aneja, 2007).

INTERNATIONAL TRADE OF TRADITIONAL DAIRY BASED SWEETS

The trade among various countries is increasing. It is therefore necessary to establish a regional standard for dairy based sweets covering quality and safety aspects. It will help to protect consumer health and to promote fair practices in food trade. The regional export data for four years is given below:

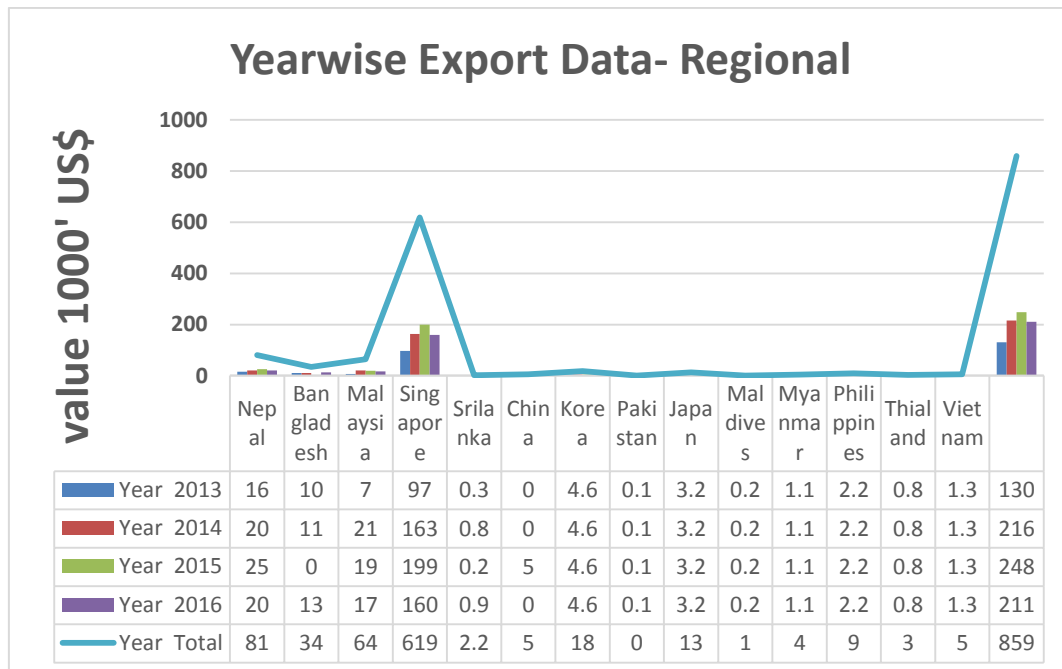
Table 1: SWEET RASGULLA EXPORT DATA- ASIA- REGIONAL

Total Value of Exports (India)

Total Value \$859,000

Total Value INR 60 (Million)

S.NO	Description	Year				Total
		2013	2014	2015	2016	
1	Nepal	16	20	25	20	81
2	Bangladesh	10	11	0	13	34
3	Malaysia	7	21	19	17	64
4	Singapore	97	163	199	160	619
5	Srilanka	0.3	0.8	0.2	0.9	2.2
6	China	0	0	5	0	5
7	Korea	4.6	4.6	4.6	4.6	18
8	Pakistan	0.1	0.1	0.1	0.1	0
9	Japan	3.2	3.2	3.2	3.2	13
10	Maldives	0.2	0.2	0.2	0.2	1
11	Myanmar	1.1	1.1	1.1	1.1	4
12	Philippines	2.2	2.2	2.2	2.2	9
13	Thailand	0.8	0.8	0.8	0.8	3
14	Vietnam	1.3	1.3	1.3	1.3	5
Total		130.3	215.8	248.2	210.9	859



Source: <https://www.zauba.com/exportanalysis-rasgulla-report.html>

GULAB JAMUN EXPORT DATA- ASIA - REGIONAL

Total Value of Exports (India)

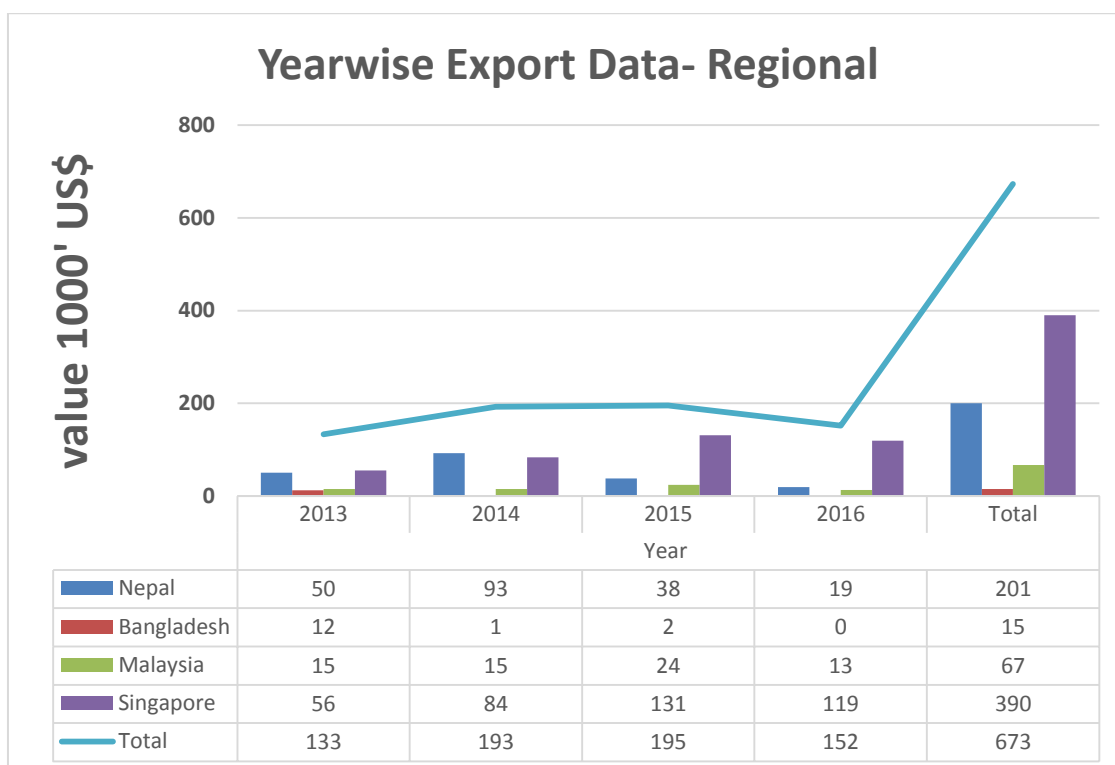
Total Value **\$67,3000**

Total Value **INR 47.1 (Million)**

Table 2: Export data of Gulab Jamun

Description	Year (Values in 1000 US\$)				
	2013	2014	2015	2016	Total
Nepal	50	93	38	19	201
Bangladesh	12	1	2	0	15
Malaysia	15	15	24	13	67
Singapore	56	84	131	119	390
Total	133	193	195	152	673

Source: <https://www.zauba.com/exportanalysis-rasgulla-report.html>



DISCUSSION

Absence of harmonised standards potentially results in non-compliances at the import end. To overcome the resultant or potential impediments to international trade, it is appropriate to develop a single comprehensive standard acceptable internationally.

Due to lack of uniformity commodity standards in the region, the regional trade of traditional dairy based sweets is affected to some extent, which makes it difficult to protect consumer's health and fair trade. The difference of processing and consuming habits leads to different classifications and quality requirements for traditional dairy based sweets. The regional standard for dairy based sweets should eliminate the quality problems of dairy based sweets, solve the safety concerns of consumers, and is expected to expand the trading opportunity of exporting countries.

Currently, there are no Codex standards for Traditional Dairy based Sweets. Hence, there is a need to develop standard for dairy based sweets by Codex. Absence of harmonised standards potentially results in unnecessary questions about non-compliances at the import point. To overcome the resultant or potential impediments to international trade, it is appropriate to develop a single comprehensive standard acceptable internationally. Harmonized Codex standards for dairy based sweets will help to protect the health of consumers and promote fair practices in the food trade. Development of the standard is expected to benefit consumers and major producing / exporting countries, most of whom are developing countries.

RECOMMENDATION

The Committee is invited to consider the proposal for new work and make suitable recommendation to the Codex Alimentarius Commission for consideration.