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Major constrain faced and scio-economic impact of khoa production on producers of major khoa producing areas of Marathwada region

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Abstract
The present study was carried out on "Major constrain faced and scio-economic impact of *khoa* production on producers of major Khoa producing areas of Marathwada region". The analysis was conducted in the laboratory of Department of Animal Husbandry and Dairy Science, College of Agriculture, Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhani during the year 2017-18. Khoa an important indigenous milk product, is used as a base material for a variety of sweets, such as burfi, peda, Gulab jamun, milk cake, Kalakand, Kunda etc. Conventionally it is prepared by continuous boiling of milk in an open kettle until desirable concentration (normally 65- 72 per cent total solids) and texture are achieved. According to one estimate about 5.5 per cent of total milk production is converted into *khoa*, the manufacture of Khoa is largely in the hands of private traders (Halwais). They use highly primitive techniques essentially based on their experience. The scale of production is too small each batch comprising of about 4 -5 liters of milk. The equipment used for manufacture of khoa is made up of iron or cast iron or mild steel. The conventional method used by halwais for the manufacture of khoa are through simple and cost effective, suffer from several inherent limitations. In the present investigation was suggested that the good processing and handling practices as well as proper packaging and marketing of khoa can increase the shelf life of *khoa*. The various constrains faced by the producers must be sorted out and mechanization of khoa making should be done with good marketing facilities which may help to increase income of farmers and reduce the rate of suicides.

Keywords: Khoa, halwais, buffalo milk

Introduction
India has gained top position in milk production after white revolution with an average annual milk production of 164.31 MT in 2016-17, accounting for more than 16 per cent of world's total production. It is estimated that about 50–55 per cent of Indian milk production is converted into milk products. As the growth rate of dairy industry in India is growing, the demand for energy efficient and highly sophisticated mechanized systems is also growing. Even today most of the traditional milk products are manufactured by conventional method, which suffers from many limitations such as low heat transfer rates, high fouling behaviour, batch to batch variation in product quality, poor hygienic, poor sanitary standards and lot of stress on the operator.

Khoa an important indigenous milk product, is used as a base material for a variety of sweets, such as burfi, peda, Gulab jamun, milk cake, Kalakand, Kunda etc. Conventionally it is prepared by continuous boiling of milk in an open kettle until desirable concentration (normally 65-72 per cent total solids) and texture are achieved. According to one estimate about 5.5 per cent of total milk production is converted into khoa (Banerjee, 1997) [1] and on the basis of present milk production of about 91 million tonnes per annum this amount is equivalent to 3 million kilos of khoa per day.

The manufacture of khoa is largely in the hands of private traders (Halwais). They use highly primitive techniques essentially based on their experience. The scale of production is too small each batch comprising of about 4 -5 liters of milk. The equipment used for manufacture of khoa is made up of iron or cast iron or mild steel. The conventional method used by halwais for the manufacture of khoa are through simple and cost effective, suffer from several inherent limitations (Pal, 2000) [2].

Materials and Methods
Out of eight districts in Marathwada region two districts namely Beed and Osmanabad were selected purposefully to be having high production.

From each of these districts three talukas were selected on the basis of more production as compared to other talukas. Selected talukas from Beed districts were Kaij, Dharur and Beed and from Osmanabad district were Bhoom, Vashi and Kalam.

Selection of Respondents

Twenty respondents (khoa producer) were selected from each talukas, thus 120 respondents (khoa producer) were selected. The respondent (khoa producer) who produces khoa more than 10 kg/ day were selected.

Selection of Samples for Analysis

The list of respondents (khoa producer) was prepared and the samples were drawn by n^{th} method of random sampling. Steps involved in n^{th} method of random sampling were all the respondents were arranged in serial number 1 to N, and the size of the samples was determined. Secondly the sampling interval was determined by dividing the population by the size of sample i.e. N/n = K, Where K= sample interval, n= sample size and N= size of population. Third step was that a number was selected at random from the first sampling interval. The subsequent samples were selected at equal or regular interval. 12 respondents were drawn by n^{th} method of random sampling.

Result and Discussion

In the present study one of the parameter that was studied from the point of view of producers is constraints faced by the producers in manufacturing and selling of khoa that is produced. A questioner was prepared to study the constraints faced and its results [10-12].

Constrain Faced and Scio Economic Impact on Producers

Information regarding constrain faced by khoa producers of Marathawada region and Specially of Beed and Osmanabad districts by interview, observations and questionnaire. Information regarding storage of khoa in Beed and Osmanabad district is collected from khoa producers from different categories like khoa producers without freeze and with freeze. How khoa is stored has been observed by visiting units and by personal discussion with khoa producers.

It was observed out of 120 producers selected from two districts that is Osmanabad and Beed of Marathwada region that the most important constraint faced were ranked on the basis of per cent producer adopt or faced the problems. The constrain faced can be seen in Table.1. first constraint was that the producers were not aware of three types of khoa like Pindi, Danedar and Dhap (87.50 per cent), the second constraint faced was not knowing through or scientific knowledge about khoa business (82.50 per cent), third constrain faced was that of more expenditure is required for establishing khoa business (74.16 per cent), fourth constrain was that of not aware of mechanized method of khoa production (65.83 per cent), fifth constraint was cheating in rates and in weight in marketing in main market (64.16 per cent), the sixth constraint faced was availability of fuel (62.40 per cent), seventh constraint faced was non-availability of information and training about mechanized method of khoa making (61.66 per cent), eighth constraint faced is non-availability of major market near to production area (60.00 per cent), the ninth constraint faced was not aware about storage technology because khoa was send immediately after preparation (55.83 per cent), tenth constraint was un availability of storage facility (53.33 per cent) respectively. The above findings were in accordance with the work done by Patil *et. al.* (2009) reported constraints faced by the dairy farmers in Nagpur district. Majority of the respondents 72.44 per cent stated their constraint as low milk production from the local breeds, 45.33 per cent as shortage of green fodder and 41.33 per cent as lack of clean water while 25.33 per cent stated lack of preservation facility as their constraint. Referring to the financial constraints, 78.22 per cent respondents stated their constraint as delay in milk payment, 63.11 per cent as inadequate money and lack of loan facility whereas high cost of concentrates as the constraint by 56.44 per cent of the respondents. As regards technical constraints, majority of the respondents (68.00 per cent) have stated their constraint as inadequate knowledge of diseases, their prevention and control while 56.89 per cent have referred their constraint as non-availability of veterinary services, Kulkarni and Hem bade (2010) [3] reported that even having profit margin in fluid milk production, due to lack of milk collection centers, lack of chilling facilities and transportation facilities, milk producers in some area converts their milk in to khoa as there is market for khoa than milk, Puri *et. al.* (2018) [5] reported that 80.00 per cent of the respondents were having medium level of knowledge about khoa production practices. Remarkable (64.00 per cent) percentage of the respondents were having medium level of adoption. Cent percent respondents were adopting practice of avoiding addition of any foreign material and contamination. Not aware about types of khoa like Pindi, Danedar and Dhap and more expenditure is required to establish khoa business were the constraints faced by most of khoa producers.

While studying the constraint faced by the producers of the major khoa producing area of Marathwada region the socio-economic aspect of producers were also studied, Which included the average expenditure, average marketing cost, distribution of producers according to khoa production unit, mode of marketing, knowledge and adoption of khoa production practices.

Table 1: Constraints faced by the khoa producers / respondents

S. No	Constraints	No of producers	Per cent	Rank
1	Scarcity of man power	53	44.16	XI
2	No through / scientific information about khoa business	99	82.50	II
3	Khoa production is time consuming	21	17.50	XIV
4	Not aware about the three types of khoa like Pindi, Danedar and Dhap	105	87.50	I
5	After khoa production within 24-36 hours khoa must sold otherwise it will be thrown out	50	41.66	XIII
6	Problems in the transportation	16	13.33	XV
7	Not aware about storage technology	64	53.33	X
8	Not aware about mechanized method of khoa production, due to which cannot able to produce quality and high shelf life *khoa*	79	65.83	IV
9	No consistency in good market price for khoa throughout the year due to which more loss in	53	44.16	XII

	this business			
10	Fuel is major constraint in traditional khoa production	74	61.66	VII
11	Unavailability of storage facilities	26	62.40	VI
12	Main khoa market place is not nearer	67	55.83	IX
13	Cheating in rates and in weight in marketing from the main market	77	64.16	V
14	Cannot get the information and training about mechanized method of khoa production technology	72	60.00	VIII
15	More expenditure is required to establish khoa business	89	74.16	III

Average expenditure for procuring of milk was Rs. 1250, wages Rs. 75, fuel Rs.60, packaging Rs. 12 and Transport Rs. 10. It was observed that average expenditure for 10 kg khoa production was Rs. 1407 can be seen in table no 2.

Khoa produced was marketed in Pune and Hyderabad market and it was not marketed through local market, It was observed that average marketing cost of 10 kg khoa for Pune, market was Rs. 120 and for Hyderabad market was 140 kg can be seen in table no3.

Table 2: Average expenditure for 10 kg khoa production

S. No.	Particulars	Expenditure (Rs.)
1.	Fuel	60
2.	Wages	75
3.	Procuring of milk	1250
4	Packaging	12
5	Transportation	10
	Total	1407

Summary and conclusion

Constrain faced by the producers were not aware of three types of khoa like Pindi, Danedar and Dhap (87.50 per cent), not knowing through or scientific knowledge about khoa business (82.50 per cent), more expenditure is required for establishing khoa business (74.16 per cent), not aware of mechanized method of khoa production (65.83 per cent), cheating in rates and in weight in marketing in main market (64.16 per cent), availability of fuel (62.40 per cent), non-availability of information and training about mechanized method of khoa making (61.66 per cent), non-availability of major market near to production area (60.00 per cent), not aware about storage technology because khoa was send immediately after preparation (55.83 per cent), un availability of storage facility (53.33 per cent) respectively. These were the main constrain due to which the was no development in khoa preparation and marketing at healthy condition.

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