

International Journal of Statistics and Applied Mathematics

ISSN: 2456-1452

Maths 2024; SP-9(1): 188-193

© 2024 Stats & Maths

<https://www.mathsjournal.com>

Received: 26-11-2023

Accepted: 30-12-2023

Rishabh Sharma

M. Tech-Scholar, Dairy
Engineering Department, SMC
College of Dairy Science, Anand
Agriculture University, Anand,
Gujarat, India

Jaydipsinh B Raol

Assistant Professor, State
Agriculture Council,
Gandhinagar, Gujarat, India

Manisha Singodia

Ph.D. Scholar, College of
Veterinary and Animal Science,
Bikaner, Rajasthan, India

Sanjeev Kumar

College of Dairy and Food
Technology, Bassi, Jaipur,
Rajasthan, India

Sonam Kumari

Ph.D. Scholar NDRI-Karnal,
Haryana, India

Sumit Mehta

College of Dairy and Food
Technology, Bassi, Jaipur,
Rajasthan, India

Lokesh Tak

College of Dairy and Food
Technology, Bassi, Jaipur,
Rajasthan, India

Corresponding Author:**Rishabh Sharma**

M. Tech-Scholar, Dairy
Engineering Department, SMC
College of Dairy Science, Anand
Agriculture University, Anand,
Gujarat, India

Compositional, sensory attributes, and rheological properties of manufactured *Mathura Peda* in mechanized steam jacketed kettle

Rishabh Sharma, Jaydipsinh B Raol, Manisha Singodia, Sanjeev Kumar, Sonam Kumari, Sumit Mehta and Lokesh Tak

Abstract

India had emerged as the world's largest producer of milk with half of its production being used for the manufacture of different traditional milk products. For achieving uniform quality for the manufacture of these products on largescale, mechanization in production, standardization of process and processing conditions are inevitable. The performance of the mechanized steam jacketed kettle used in experiment was evaluated at different scraper speeds (S1=15 rpm, S2=20 rpm, S3=25 rpm) and operating steam pressures (P1=1.0 kg/cm², P2=1.5 kg/cm², P3=2.0 kg/cm²) by adopting optimum process of the product. The average chemical composition of the optimized *Mathura Peda* manufactured in mechanized jacketed kettle was 14.37% moisture content, 13.38% protein, 27.58% fat, 42.02% carbohydrate and 2.65% ash. The texture profile of optimized *Mathura Peda* was 45.53 N hardness, 0.0805 cohesiveness, 1.82 N mm adhesiveness, 5.62 N mm chewiness and 3.61 N gumminess.

Keywords: *Mathura Peda*, mechanization, hardness, cohesiveness, adhesiveness, chewiness, gumminess

Introduction

India is the largest milk-producing country in the world. According to Basic Animal Husbandry Statistics, DAHD & F, GOI, India's milk production in 2019-20 was 198.4 million tons (NDDB, Anand). The conversion of liquid milk into traditional dairy products increases the longevity of milk solids. The consumption of sweets is an integral part of the Indian dietary system. Traditional dairy products have great commercial significance as they account for over 90 per cent of all dairy products consumed in the country (Aneja *et al.*, 2002) [1].

Traditional dairy products not only have an established market in India but also have great export potential because of the strong presence of the Indian diaspora in many parts of the world. The small-scale technology adopted by halwais for the preparation of indigenous products cannot be exploited for industrial production.

Mechanization for the manufacturing of TIDP would give large-scale production with the best possible hygienic and economical production. It would facilitate the convenient handling of both raw material and finished products. By, mechanization, it would be possible to use the same equipment's for its multiple utilization because most of the processes in TIDPs preparation consist of the same operations *viz.* heating, cooling, mixing, straining, pressing, and so forth with a little bit of variation in their level of process parameters. The mechanization production of value-added dairy products will give the advantages like (a) economic production, (b) uniform quality, (c) hygienic production and better keeping quality, (d) scale-up production, (e) less laborious process, (f) less energy consumption, (g) better control over the process parameters to maintain standardized sensory and rheological attributes, and (h) promote exports of TIDP through small and medium entrepreneurs. It is also necessary to develop and standardize a commercial method of manufacture of *Mathura Peda*, which can be adopted at the industrial level.

Materials and Methods

Compositional Attributes Analysis

Mathura Peda samples were subjected to various compositional attribute tests as described below:

Moisture

BIS (1983) [2] procedure was used to assess the moisture content of *Mathura Peda*. In a dried and tarred aluminum tray, about 3 g of sample was weighed, thoroughly mixed with about 5 ml of water, and placed in an oven adjusted to 102 ± 1 °C. The dish was immediately transferred to the desiccator after 4 hours. The dish was weighed after cooling for about 30 minutes.

Calculation of moisture content

$$\text{Moisture (\% w/w)} = \frac{W_1 - W_2}{W_1 - W} \times 100$$

Where,

W = Weight of the empty dish, g

W_1 = Weight of the dish with sample before drying, g

W_2 = Weight of the dish with sample after drying, g

Fat

Fat extraction of *Mathura Peda* was determined as per the procedure described in IS: 2311-1963. In a Mojonnier fat extraction tube, one gram of sample was weighed. Then it was diluted with 1 ml Concentrated Ammonia in the lower bulb of the fat extraction drain, then add 10 ml ethyl alcohol and 25 ml diethyl ether. The tube was closely closed and the contents were shaking vigorously. After that, the tube was opened and 25 ml of light petroleum ether was added, followed by 1 minute of shaking and 5 minutes of centrifugation. The supernatant was decanted into a dish which had already been dried, cooled, and measured.

Using 15 ml diethyl ether and 15 ml petroleum ether, the extraction and decantation procedure was repeated twice. After drying the solvent on a hot plate, the dish was placed in an oven at 100 °C for 1 hour to complete dehydration. After cooling, the dish was weighed, and the percent fat was calculated using the following formula:

$$\text{Fat (\% by weight)} = \frac{\text{weight of residue}}{\text{weight of sample}} \times 100$$

Total Protein

The total nitrogen/protein content of *Mathura Peda* was calculated using the semi-micro Kjeldahl process (IS: 1479-Part-II, 1961) and the Kjell-plus digestion system (Model-KPS 006L, M/s. Pelican Instruments, Chennai) and Kjell-plus semi-automatic distillation system (Model-Distil M, M/s. Pelican Instruments, Chennai) as follows:

In a digestion tube, 0.5-1.0 g of the sample was accurately weighed then add 2.4 g of digestion mixture (potassium sulfate: copper sulfate: selenium dioxide; 1:0.1:0.1). Then add 10 ml of nitrogen-free concentrated sulphuric acid. The contents of the tubes were then moved to the digestion block, where they were digested for about 30 minutes at a final temperature of 350 °C.

The cooled, digested contents were loaded into the Kjell-plus distillation unit, and once it was ready, a fixed volume of alkali (20 ml of 40% sodium hydroxide) was applied to the sample automatically. The distillation time was set to three minutes. The liberated ammonia was condensed and collected in 25 ml of a saturated boric acid solution containing three drops of mixed indicator [equal volume of a saturated solution of methyl red and 0.1 percent methylene blue solution, both made in 95 percent (v/v) ethanol]. The distillate in boric acid was titrated against 0.05 N sulphuric acid. A reagent blank was simultaneously run using all the above chemicals except the sample and its reading was subtracted from the experimental reading. The percent total nitrogen was calculated using the formula:

$$\% \text{ Total nitrogen} = \frac{0.07 * (\text{Burette reading} - \text{Blank reading})}{W}$$

Where, W = Weight of sample

For converting the values of total nitrogen into percent total protein, the values were multiplied by a factor of 6.38.

Ash

The Ash content of all the samples was determined using the BIS process (IS: 1547-1985). In a silica crucible, 2 gm of homogeneous sample were weighed. On naked-flame, the sample in the crucible was heated until it was finally reduced to ash. The sample was then placed in a muffle furnace and heated to 550 °C for 3.5 hours. After cooling in the desiccator, the crucible was weighed. The process was repeated till constant weight. The total ash content in percent was calculated as follows:

$$\text{Total Ash (\% by weight)} = \frac{W_2 - W}{W_1 - W} \times 100$$

Where, W = Weight in g of the empty crucible

W_1 = Weight in g of the crucible with sample

W_2 = Weight in g of the crucible with ash

Total Carbohydrates

Total carbohydrate content was estimated by difference. The total amount of moisture, ash, fat, and protein is deducted from 100.

Texture Profile Analysis

Five samples of each experimental *Mathura Peda* were subjected to uniaxial compression to 70% of the initial sample height, using a Food Texture Analyzer of Lloyd Instruments LRX Plus material testing machine, England; fitted with 0-500 kg load cell. The force-distance curve was obtained for a two-bite deformation cycle employing a Cross Head speed of 50 mm/min, Trigger 10 gf, and 70% Compression of the samples to determine various textural attributes of *Mathura Peda* held for 1 h at 23 ± 1 °C and 55% RH.

The complete work of calculations of the area under the force-distance curve, statistical analysis of data generated, and their conversion into various textural attributes were carried out by direct transfer of the data to Lloyd Instruments NEXYGEN data analysis and applications software.

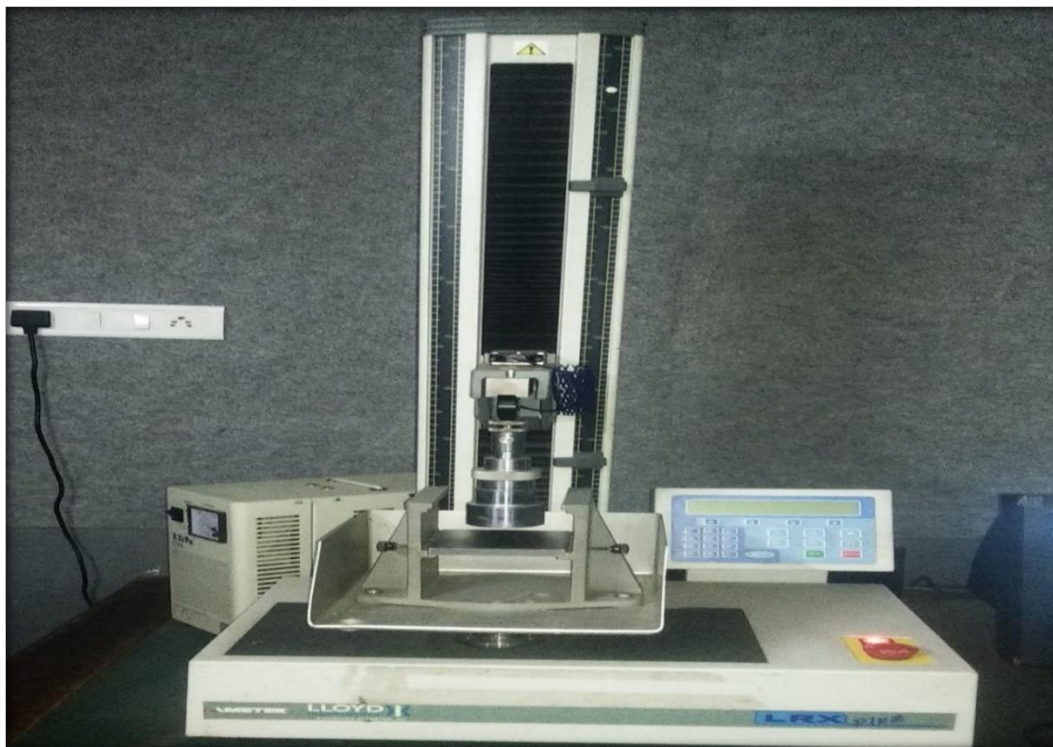


Fig 1: Food texture analyzer

Sensory Evaluation

For the organoleptic evaluation of *Mathura Peda*, 8 judges were selected based on the duo-trio test. The *Mathura Peda* samples were evaluated using a 100-point linear intensity rating scale. The score-card suggested for *Khoa* by Gupta and Pal (1985) [3] was used with some modifications for judging the product *Mathura Peda* during this study (Annexure). The judges were also requested to give criticism for each attribute of the samples.

Result and Discussion

Sensory evaluation of *Mathura Peda* manufactured in a mechanized jacketed kettle

The sensory quality is extremely important in determining its acceptability. For effective mechanization of the process, the sensory qualities of the product should be similar to those of a

traditional product. Because it's important to understand the various types and degrees of product defect, a 100-point scorecard was used for sensory evaluation of the product. Based on sensory evaluation of the product using the 100-point scorecard given in Annexure, the operating conditions of the mechanized jacketed kettle for the manufacture of *Mathura Peda* were optimized.

Effect of different operating conditions of mechanized jacketed kettle on flavour scores of *Mathura Peda*

Table 1 shows the average flavour scores of *Mathura Peda* produced at different steam pressures and scraper speeds. The steam pressure and scraper speed had a significant effect at 5% level of significance ($p < 0.05$) on the flavour score of the product.

Table 1: Flavour score of *Mathura Peda* at different steam pressure and scraper speed

Steam Pressure kg/cm ²	Flavour Score (45)			Mean (P)
	Scraper Speed (RPM)			
	S ₁ (15)	S ₂ (20)	S ₃ (25)	
P ₁	37.61	38.44	40.22	38.76
P ₂	40.16	41.83	43.33	41.77
P ₃	38.83	39.94	41.66	40.16
Mean (S)	38.88	40.07	41.74	
	SEm±	CD (0.05)	CV%	
P	0.190	0.570	1.42	
S	0.190	0.570		
P X S	0.329	NS		

The flavour score was significantly higher in sample P₂ (43.33) than the remaining steam pressure of P₁ (40.22) and P₃ (41.74) at 25 rpm scraper speed.

The interaction effect of steam pressure and scraper speed was found non-significant at 5% level of significance ($p < 0.05$) on the flavour score of *Mathura Peda*. The *Mathura Peda*, which was manufactured in a mechanized jacketed kettle with a steam pressure of 1.5 kg/cm² and a scraper speed of 25 rpm, had the maximum flavour score.

Effect of different operating conditions of mechanized jacketed kettle on Body & texture score of *Mathura Peda*

Table 2 shows the average body and texture scores of *Mathura Peda* produced at different steam pressures and scraper speeds.

It can be noticed that the body and texture score was significantly at 5% level of significance ($p < 0.05$) affected by steam pressure and scraper speed.

Table 2: Body and texture score of *Mathura Peda* at a different steam pressure and scraper speed

Steam Pressure kg/cm ²	Body and texture score (35)			
	Scraper Speed (RPM)			Mean (P)
	S ₁ (15)	S ₂ (20)	S ₃ (25)	
P ₁	27.77	29.22	30.16	29.05
P ₂	29.83	30.83	32.94	31.20
P ₃	29.55	30.33	31.33	30.40
Mean (S)	29.05	30.13	31.48	
	SEm±	CD (0.05)	CV%	
P	0.178	0.534	1.77	
S	0.178	0.534		
P X S	0.308	NS		

The body and texture score were significantly higher in sample P₂ (32.94) than the remaining steam pressure of P₁ (30.16) and P₃ (31.33) at 25 rpm scraper speed. The interaction effect of steam pressure and scraper speed was found non-significant at 5% level of significance ($p < 0.05$) on the body and texture score of *Mathura Peda*.

The *Mathura Peda* manufactured in the mechanized jacketed kettle at 1.5 kg/cm² steam pressure and 25 rpm scraper speed gave a maximum score of the body and texture.

Effect of different operating conditions of mechanized jacketed kettle on Colour and appearance score of *Mathura Peda*

The colour and appearance scores of *Peda* are depicted in Table 3. It can be noticed from the table that colour and appearance score was significantly at 5% level of significance ($p < 0.05$) affected by steam pressure and scraper speed.

Table 3: Colour and appearance score of *Mathura Peda* at different steam pressure and scraper speed

Steam Pressure kg/cm ²	Colour and appearance score (20)			
	Scraper Speed (RPM)			Mean (P)
	S ₁ (15)	S ₂ (20)	S ₃ (25)	
P ₁	14.77	15.16	15.50	15.14
P ₂	16.33	17.33	18.61	17.42
P ₃	16.22	16.89	17.33	16.81
Mean (S)	15.77	16.46	17.14	
	SEm±	CD (0.05)	CV%	
P	0.235	0.705	4.29	
S	0.235	0.705		
P X S	0.408	NS		

The colour and appearance score were significantly higher in sample P₂ (18.61) than the remaining steam pressure of P₁ (15.50) and P₃ (17.33) at 25 rpm scraper speed. The interaction effect of steam pressure and scraper speed was found non-significant at 5% level of significance ($p < 0.05$) on the colour and appearance score of *Mathura Peda*. The *Mathura Peda* manufactured in the mechanized jacketed kettle using 1.5 kg/cm² steam pressure and 25 rpm scraper speed gave the maximum score of the colour and appearance.

Effect of different operating conditions of mechanized jacketed kettle on Overall acceptability score of *Mathura Peda*

The overall acceptability scores of *Peda* are shown in Table 4. The steam pressure and scraper speed had a significant effect at 5% level of significance ($p < 0.05$) on the overall acceptability scores of *Peda*.

The overall acceptability score was significantly higher in sample P₂ (94.89) than the remaining steam pressure of P₁ (85.89) and P₃ (90.33) at 25 rpm scraper speed. The

interaction effect of steam pressure and scraper speed was found non-significant at 5% level of significance ($p < 0.05$) on the overall acceptability score of *Mathura Peda* manufacturing in the mechanized jacketed kettle. The *Mathura Peda* manufactured in the jacketed kettle using 1.5 kg/cm² steam pressure and 25 rpm scraper speed gave the maximum score of the overall acceptability product.

Table 4: Overall acceptability score of *Mathura Peda* at different steam pressure and scraper speed

Steam Pressure kg/cm ²	Overall acceptability score (100)			
	Scraper Speed (RPM)			Mean (P)
	S ₁ (15)	S ₂ (20)	S ₃ (25)	
P ₁	80.16	82.83	85.89	82.96
P ₂	86.33	89.99	94.89	90.40
P ₃	84.66	87.16	90.33	87.39
Mean (S)	83.72	86.66	90.37	
	SEm±	CD (0.05)	CV%	
P	0.295	0.883	1.02	
S	0.295	0.883		
P X S	0.510	NS		

Effect of steam pressure and scraper speed on textural analysis of *Mathura Peda*

The quality of the product is monitored not only by the sensory properties but also by their textural profile. The instrumental method of texture assessment aimed at quantifying objectively the textural characteristics to the maximum extent possible. Various instruments are in vogue for the purpose, but the Food Texture Analyzer of Lloyd Instruments LRX Plus Material Testing Machine working on parallel plate uniaxial compression principle, is one of the most widely used instruments in the food industry for the study of the behavior of food while chewing and mastication before swallowing in the mouth.

The textural characteristics of *Mathura Peda* were greatly influenced by its composition, type of raw material used, and manufacturing parameters followed. The properties studied were hardness, cohesiveness, adhesiveness, chewiness, and gumminess. The shape and size of the *Mathura Peda* under measurement was tried to keep uniform as much as possible.

Hardness (N)

Hardness (N) refers to the peak force that results from a sample being compressed to a given distance, time, or percent deformation. On a two-bite force-time curve, it means the highest point of the peak in the first bite at the pre-decided compression cycle. A higher value is indicative of a greater hardness value. The average value of hardness of *Mathura Peda* was 41.65 N. The average value of hardness obtained is 37.21, 43.25 and 44.50 N at P₁, P₂, and P₃ steam pressure, respectively. Similarly, the average values of hardness are

39.97, 41.13, and 43.87 N at S₁, S₂ and S₃ scraper speed, respectively.

It can be noticed from the table that hardness value was significant at 5% level of significance ($p < 0.05$) affected by steam pressure and scraper speed. The interaction effect of steam pressure and scraper speed was found non-significant at 5% level of significance ($p < 0.05$).

Table 5: Hardness (N) of *Mathura Peda* at different steam pressure and scraper speed

Steam Pressure kg/cm ²	Hardness (N)			
	Scraper Speed (RPM)			Mean (P)
	S ₁ (15)	S ₂ (20)	S ₃ (25)	
P ₁	35.62	37.28	38.73	37.21
P ₂	41.46	42.77	45.53	43.25
P ₃	42.82	43.34	47.34	44.50
Mean (S)	39.97	41.13	43.87	
	SEm±	CD (0.05)	CV%	
P	0.981	2.940	7.06	
S	0.981	2.940		
P X S	1.699	NS		

Cohesiveness

Cohesiveness refers to the extent to which a material can be deformed before it ruptures. In other words, it refers to how a food product stays together after deformation. It is the ratio of the area under the second peak to that under the first peak of the two-bite force-time curve obtained while texture analysis. The average value of cohesiveness of *Mathura Peda* is 0.078. The average values of cohesiveness obtained is 0.0689, 0.0770 and 0.0872 at P₁, P₂ and P₃ steam pressure, respectively. Similarly, the average values of cohesiveness are

0.0738, 0.0780 and 0.0814 at S₁, S₂ and S₃ scraper speed respectively.

It can be noticed from the table that cohesiveness value was significant at 5% level of significance ($p < 0.05$) affected by steam pressure and scraper speed. The interaction effect of steam pressure and scraper speed was found non-significant at 5% level of significance ($p < 0.05$).

Table 6: Cohesiveness of *Mathura Peda* at different steam pressure and scraper speed

Steam Pressure kg/cm ²	Cohesiveness			
	Scraper Speed (RPM)			Mean (P)
	S ₁ (15)	S ₂ (20)	S ₃ (25)	
P ₁	0.0643	0.0705	0.0718	0.0689
P ₂	0.0741	0.0766	0.0805	0.0770
P ₃	0.0829	0.0870	0.0919	0.0872
Mean (S)	0.0738	0.0780	0.0814	
	SEm±	CD (0.05)	CV%	
P	0.001	0.002	2.94	
S	0.001	0.002		
P X S	0.001	NS		

Adhesiveness (N mm)

It is the work necessary to overcome the attractive forces between the surfaces of the sample and the other materials with which sample comes in contact.

The average value of adhesiveness of *Mathura Peda* was 1.76. The average values of adhesiveness obtained is 1.58, 1.78, and 1.92 at P₁, P₂ and P₃ steam pressure, respectively. Similarly, the average values of adhesiveness are 1.65, 1.78, and 1.86 at S₁, S₂ and S₃ scraper speed, respectively.

Table 7: Adhesiveness (N mm) of *Mathura Peda* at different steam pressure and scraper speed

Steam Pressure kg/cm ²	Adhesiveness (N mm)			
	Scraper Speed (RPM)			Mean (P)
	S ₁ (15)	S ₂ (20)	S ₃ (25)	
P ₁	1.34	1.67	1.71	1.58
P ₂	1.75	1.78	1.82	1.78
P ₃	1.85	1.88	2.04	1.92
Mean (S)	1.65	1.78	1.86	
	SEm±	CD (0.05)	CV%	
P	0.018	0.053	3.03	
S	0.018	0.053		
P X S	0.031	0.092		

It can be noticed from the table that adhesiveness value was significant at 5% level of significance ($p < 0.05$) affected by steam pressure and scraper speed. The interaction effect of steam pressure and scraper speed was found significant at 5% level of significance ($p < 0.05$).

Chewiness (N mm)

Chewiness refers to a combination of gumminess and springiness. It is the energy required to masticate a sample to a state ready for swallowing. It is a product of hardness, cohesiveness and springiness.

The average value of chewiness of *Mathura Peda* was 5.41. The average values of chewiness obtained were 4.69, 5.44, and 6.13 at P₁, P₂ and P₃ steam pressure, respectively. Similarly, the average values of chewiness were 5.18, 5.48, and 5.59 at S₁, S₂ and S₃ scraper speed, respectively.

It can be noticed from the table that chewiness value was significant at 5% level of significance ($p < 0.05$) affected by steam pressure and scraper speed. The interaction effect of steam pressure and scraper speed was found non-significant at 5% level of significance ($p < 0.05$).

Table 8: Chewiness (N mm) of *Mathura Peda* at different steam pressure and scraper speed

Steam Pressure kg/cm ²	Chewiness (N mm)			
	Scraper Speed (RPM)			Mean (P)
	S ₁ (15)	S ₂ (20)	S ₃ (25)	
P ₁	4.51	4.75	4.80	4.69
P ₂	5.24	5.45	5.62	5.44
P ₃	5.80	6.23	6.36	6.13
Mean (S)	5.18	5.48	5.59	

	SEm±	CD (0.05)	CV%
P	0.043	0.129	2.38
S	0.043	0.129	
P X S	0.074	NS	

Gumminess (N)

It is the energy required to masticate a sample to a state ready for swallowing. Gumminess is a product of hardness and cohesiveness.

The average value of gumminess of *Mathura Peda* was 2.20. The average values of gumminess obtained were 2.49, 3.29 and 3.72 at P₁, P₂ and P₃ steam pressure, respectively. Similarly, the average values of gumminess were 2.91, 3.15 and 3.44 at S₁, S₂ and S₃ scraper speed, respectively.

It can be noticed from the table that chewiness value was significant at 5% level of significance ($p < 0.05$) affected by steam pressure and scraper speed. The interaction effect of steam pressure and scraper speed was found non-significant at 5% level of significance ($p < 0.05$).

Table 9: Gumminess (N) of *Mathura Peda* at different steam pressure and scraper speed

Steam Pressure kg/cm ²	Gumminess (N)			Mean (P)
	Scraper Speed (RPM)			
	S ₁ (15)	S ₂ (20)	S ₃ (25)	
P ₁	2.20	2.52	2.76	2.49
P ₂	3.02	3.23	3.61	3.29
P ₃	3.52	3.69	3.96	3.72
Mean (S)	2.91	3.15	3.44	
	SEm±	CD (0.05)	CV%	
P	0.038	0.114	3.63	
S	0.038	0.114		
P X S	0.066	NS		

Proximate chemical composition of optimized *Mathura Peda* manufactured in mechanized jacketed kettle

The proximate chemical composition of optimized *Mathura Peda* manufactured in the mechanized jacketed kettle is shown in Table 10.

Table 10: Proximate chemical composition *Mathura Peda*

Chemical Composition	Average value (%)
Moisture	14.37 ± 0.28
Fat	27.58 ± 0.76
Protein	13.38 ± 0.32
Total carbohydrate	42.02 ± 1.56
Ash	2.65 ± 0.20

Each observation is a mean ± SD of three replicate experiment (n=3)

References

1. Aneja RP, Mathur BN, Chandan RC, Banerjee AK. Technology of Indian Milk Product. Dairy India Year Book. New Delhi: Dairy India Publication; c2002. p. 133-142.
2. Bureau of Indian Standards (BIS). IS 10484. Specification for khoa. New Delhi: Manak Bhawan; c1983.
3. Gupta SK, Pal D. Sensory evaluation of Indian Milk Products. Indian Dairyman. 1985;37(10):465-467.
4. Indian Standard 1479 (Part II) (1961). Methods of test for dairy industry (Part II). Chemical analysis of milk. New Delhi: Indian Standards Institution, Manak Bhavan.
5. Indian Standard 1547. Specifications for Infant Milk Foods. New Delhi: Bureau of Indian Standards, Manak Bhavan; c1985.

6. Indian Standard 2311. Fat extraction apparatus for milk and milk products (first revision). New Delhi: Indian Standards Institution, Manak Bhavan; c1963.
7. NDDDB to estimate India's milk demand; c2019. Available from: www.nddb.org.

Annexure

Mathura peda score card

Name: _____

_____ Date: _____

Sensory Attributes	Max. Score	Sample No.			
		A	B	C	D
Flavour	45				
Body & Texture	35				
Colour & Appearance	20				
Total Score	100				