

## دراسات عن الجبن القريش في الصعيد ١ - التحليل الكيميائي

ت. أ. البسيوني - ع. أ. أحمد

يعتبر الجبن المنزوع منه القشدة من أهم الأغذية خاصة للطبقة الفقيرة في مصر حيث وجد أنه يحتوي على نسبة عالية من البروتينات التي لا تفوقها أنواع أخرى وخاصة النباتية من حيث قيمتها الغذائية وسهولة هضمها ويعد الجبن القريش مصدرا جيدا لمجموعة فيتامين (ب) المركب ومنها الريبوفلافين كما يعتبر من أفضل وأرخص مصادر الأغذية للكالسيوم والفسفور .

ولقد تبين من التحليل الكيميائي لعدد ١٠٠ عينة من الجبن القريش الطازج والقديم أن متوسط نسبة الرطوبة - الدهن - البروتين - أملاح كلوريد الصوديوم والرماد في الجبن الطازج هي ٦٩.٥٦ - ٥.٥٨ - ١٧.٤٩ - ٤.٦٦ - ١.١٥ وفي الجبن القديم ٦٠.٨٨ - ١٨.٩٩ - ٩.٣٧ - ٦.٤١ - ١٢.٨٨ على التوالي ويلاحظ من ذلك أن الجبن القديم أعلى في مكوناته الغذائية عن الجبن الطازج .



## STUDIES ON KAREISH CHEESE IN UPPER EGYPT

### I- PHYSICAL AND CHEMICAL STUDIES

(with 2 tables)

By

T. A. El Bassiony and A.A. Ahmed

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#### SUMMARY

One hundred samples of fresh and pickled kareish cheese (50 each), collected from the markets in Assiut province, were subjected to physical and chemical examinations.

The physical examination of collected samples revealed the presence of holes of varying shapes and sizes in 50% of fresh cheese samples, while such defect could be detected in 96% of pickled cheese. Bitter taste could be detected in 10% of fresh cheese and in 22% of pickled cheese, while putrefactive odour was found in 2% of fresh as well as pickled cheese.

The mean content of moisture, total solids, fat, proteins and ash as well as sodium chloride and titratable acidity of fresh cheese samples were 69.56%, 30.44%, 5.58%, 17.49%, 6.15%, 4.66% and 0.77%, respectively, while those of pickled cheese were 60.88%, 39.12%, 6.41%, 18.99%, 12.68%, 9.37% and 1.57% respectively,

#### INTRODUCTION

Cheese is an article of diet which has attained a considerable popularity during the last decades. The importance of cheese for human nutrition cannot be over-emphasized due to its exceptional richness in high quality animal protein and high content of calcium, phosphates and vitamins A and B<sub>2</sub>.

The most popular varieties of soft cheese in Egypt are kareish and Damietta cheeses. The kareish cheese is very much cheaper, thus it is considered the main protein supplement to farmers and average class population.

The kareish cheese prepared from skimmed milk may be consumed fresh or stored in a pickling mixture (mish).

The product is either consumed by the farmers family or exposed to local markets for sale.

## LITERATURE

EL-KATIB (1942) examined 51 samples of kareish cheese and found that the average moisture was 67.98%, dried substance 32.02%, protein 16.63%, fat 4.16% and ash 8.77%, while the average content of these constituents in 7 samples of mish were 70.22%, 29.78%, 10.04%, 2.55, and 15.46%, respectively. HAMDY (1949) estimated sodium chloride content in mish samples and found that it ranged from 3.45 to 21.90%. FAHMY (1950) mentioned that the flavour and body texture of kareish cheese are affected by its chemical composition, flora present in milk as well as the storage period. The same author (1950) reported that the average moisture content in kareish cheese was 66.46%. He also noticed that as the salt content of cheese increased, the moisture content progressively decreased. MOURSY and NASR (1964) found that the mean content of sodium chloride and titratable acidity in examined samples of kareish cheese were 6.67% and 1.69%, respectively. EL-SADEK *et al.* (1968) recorded that the mean value of acidity and sodium chloride content in kareish cheese were 1.5 and 5.52%, respectively. They noticed that samples of cheese having higher concentration of salt were low in acidity percentage. They also added that the addition of salt at proper time could inhibit any excessive development of acidity and the produced cheese would not have the undesirable sharp acid flavour. ABDEL-RAHMAN (1972) found that all samples of kareish cheese had fruity odour, 55% had salty taste, 30% were harsh and 95% had holes of varying shapes and sizes. The same author (1972) reported that the average content of moisture, total solids, fat, protein, ash, sodium chloride and titratable acidity of examined samples of kareish cheese were 64.79%, 35.29%, 8.48%, 22.25%, 7.66%, 6.26% and 0.978%, respectively.

The main object of the present work is to investigate the nutritive value of both fresh and pickled kareish cheese by determining their major constituents.

## MATERIAL AND METHODS

One hundred random samples of fresh and pickled kareish cheese (50 each) were collected from Assiut markets. Each sample (about 300 grams) was transferred to the laboratory in a clean dry sterile glass stoppered jars.

## Preparation of samples.:

Each sample was physically examined before being thoroughly mashed in a sterile mortar.

## Chemical examination:

Determination of total solids, moisture and ash contents were conducted according to the A.O.A.C. (1965).

Estimation of fat %, protein % and sodium chloride % were carried out after DAVIS (1952), LING (1963) and HELMY (1960), respectively.

Titratable acidity percentage was determined according to the standard methods (O'CONNOR, 1969), using N/9 NaOH solution.

TABLE 1. Organoleptic characteristics of examined fresh and pickled kareish cheese

	Fresh kareish cheese		Pickled kareish cheese	
	No. of sample	%	No. of sample	%
<i>Odour</i>				
Normal . . . . .	49	98	49	98
Putrefied . . . . .	1	2	1	2
<i>Taste</i>				
Normal . . . . .	33	66	39	78
Salty . . . . .	12	24	—	—
Bitter . . . . .	5	10	11	22
<i>Consistency &amp; Defects</i>				
Soft . . . . .	38	76	22	44
Hard . . . . .	12	24	28	56
Friable . . . . .	35	70	40	80
Holeyness . . . . .	48	96	28	56
Slimy . . . . .	4	8	—	—

TABLE 2. Analytical results of major constituents of fresh and pickled kareish cheese

Constituent %	Fresh			Pickled		
	Max.	Min.	Mean	Max.	Min.	Mean
Moisture . .	78.70	54.30	69.56 + 0.69	69.80	54.20	60.88 + 0.540
Total solids .	45.70	21.30	30.44 + 0.69	45.80	30.20	39.12 + 0.54
Fat . . . . .	14.50	0.10	5.58 + 0.43	14.50	1.75	6.41 + 0.36
Protein . . . . .	22.17	10.88	17.49 + 0.39	24.43	13.40	18.99 + 0.36
Ash . . . . .	11.40	2.20	6.15 + 0.26	18.75	2.75	82.8 + 0.42
Sodium chloride	7.27	0.35	4.66 + 0.23	17.10	2.74	9.37 + 0.39
Acidity . . . . .	1.90	0.20	0.77 + 0.07	2.24	1.00	1.75 0.04

## RESULTS AND DISCUSSION

All results obtained have been registered in Tables 1 and 2.

Physical examination of the collected fresh kareish cheese (Table 1) revealed that 98% of the examined samples had normal odour, while putrefied odour was detected in 2% of samples. Also 66% of samples had a normal taste while 24% were salty and 10% were bitter in taste. Regarding the body texture and consistency, 24% of samples were hard, while 70% were soft. Holes of various sizes and shapes were observed in nearly all the samples examined (96%).

Concerning the physical examination of the pickled kareish cheese, it is found that the putrefied odour was detected in 2% of the examined samples, while normal odour was predominating in 98%. Although most of samples proved to be normal in taste (78%), yet 22% of them had a bitter taste. According to body texture and consistency, 56% of samples were hard, while 44% were soft. Holes, also were observed in 56% of the examined samples.

The chemical analysis of fresh kareish cheese revealed that the mean value of moisture, total solids, fat, protein, ash, sodium chloride and titratable acidity contents were 69.56%, 30.44%, 5.58%, 17.49%, 6.15%, 4.66% and 0.77%, respectively. While those of pickled kareish cheese were 60.88%, 39.12%, 6.41%, 18.99%, 12.68%, 9.37% and 1.75%, respectively. (Table 2).

The following table shows the mean values of the different constituents of fresh and pickled kareish cheese in different localities in Egypt estimated by other workers:

Author	Year	Type of cheese	Moisture	Total solid	Fat	Protein	Ash	Sodium chloride	acidit. Titrat.
EL-katsb	1942	Erech	67.68	32.02	4.16	16.63	8.77	—	—
		Mish	70.22	29.78	2.55	10.04	15.46	—	—
Hamdy	1949	Mish	—	—	—	—	—	3.45	—
			21.96	—	—	—	—	—	—
FAHMY El-Sadek and Abdel-Mottaleb	1950	Faesh	66.46	—	—	—	—	—	—
	1959	Fresh	70.12	29.87	5.90	—	—	4.88	—
Moursy and Nasr	1964	Fresh	—	—	—	—	—	6.67	1.69
El-Sadek <i>et al.</i>	1968	Fresh	—	—	—	—	—	5.52	1.5
Abdel-Rahman .	1972	Fresh	64.79	35.29	8.48	18.76	7.66	6.26	0.978
Our results . .	1975	Fresh	69.56	30.44	5.58	17.49	6.15	4.66	0.77
		Pickled	60.88	39.22	6.41	18.99	12.68	9.37	1.75

From the results obtained, it is evident that the major constituents of both kinds of kareish cheese (fresh and pickled) were nearly similar.

According to the Egyptian Food Acts and Regulations, only 18 samples (18%) coincide with the legal requirements for fat content, while 42% of examined samples contain higher moisture content than the legal requirements.

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