

دراسة عن الجبن القريش في صعيد مصر
التحليل الكيميائي للجبن القريش الطازج والملح

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تم جمع عدد ١٠٠ عينة من الجبن القريش الطازج والملح (٥٠ لكل منهما)
من أسواق اسكيط . وقد تم فحص العينات ظاهريا وكيميائيا .

وقد ظهر من الفحص الظاهري عن وجود فتحات مختلفة الاحجام والاشكال
في ٥٠% من عينات الجبن الطازج ، و ٥٦% من عينات الجبن الملح . كما
وجد أن ١٠% ، ٢٢% من عينات الجبن الطازج والملح على التوالي لها طعم
مر . أما الرائحة المتعفن فقد وجدت في ٢% لكل منهما .

والتحليل الكيميائي لنسبة الرطوبة ، المواد الجافة ، الدهن ، البروتين ، الرماد
وكلوريد الصوديوم والحموضة العيارية في الجبن الطازج فكانت ١٢.٥٦ ، ٣٠.٥٨ ، ٥٨.٤٩ ، ١٧.٤٩
١٢.٣٩ ، ٦.٤١ ، ١٨.٩٩ ، ١٢.٦٨ ، ١.٥٧ على التوالي .

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STUDIES ON KAREISH CHEESE IN UPPER EGYPT
I- CHEMICAL ANALYSIS OF FRESH AND PICKLED KAREISH CHEESE
(With 3 tables)

By

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SUMMARY

One hundred samples of fresh and pickled kareish cheese (50 each) were collected from markets in Assiut province.

The samples were subjected to physical and chemical examinations.

The physical characteristics of examined samples showed the presence of holes with various shapes and sizes in 96% of fresh cheese, while such defect could be detected in 58% of pickled cheese. Bitter taste could be detected in 10% of fresh cheese and in 22% of pickled cheese, while putrifactive odour was found in 2% of fresh as well as pickled cheese.

The gross chemical constituents including moisture, total solids, fat, proteins and ash as well as determination of sodium chloride and titratable acidity of fresh cheese 69.56%, 30.44%, 5.58%, 17.49%, 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 not only as it contains all the essential amino acids but as an excellent animal protein supplement, its high caloric value and its exceptionally richness in calcium as well as phosphates and vitamins A and B₂.

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The most popular varieties of soft cheese in Egypt are kareish and Damiatta cheese.

The cheese may be consumed fresh or stored in a pickling mixture (mish), which is usually consumed by poor class of population or as appetizer.

LITERATURE

Regarding the physical characteristics of kareish cheese, 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. ABDELRAHMAN (1972) found that all samples of kareish cheese had fruity odour, 55% had salty taste, 30% were harch and 95% had holes of varying shapes and sizes.

Concerning the chemical composition of kareish cheese FOSTER et al. (1941) found that the average moisture content of cottage cheese, which is one of unripened varieties of skim milk cheese, was 69.62%. 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 examined were 70.22%, 29.78%, 10.04, 2.55% and 15.46%, respectively. HANDY (1949) estimated sodium chloride content in mish samples and found that it ranged from 3.45 and 21.90%, FAHMY (1950) reported that the average moisture content in kareish cheese was 66.46%, He also noticed that as salt content of cheese increased, the moisture content progressively decreased. ECKLES and COMBS (1951) found that the fat and moisture content of examined samples of cottage cheese were ranged from 0.4 to 1.9% and from 71.4 to 79.9%, respectively MOURSY and NASR

(1964) found that the mean value of percentage of sodium chloride and titratable acidity 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 the average percentage of moisture content, total solids, fat, protein, ash, sodium chloride and titratable acidity of examined samples of kareish cheese 64.79, 35.21, 22.25, 7.66, 6.26 and 0.978, respectively.

The main object of the present investigation is to find out the nutritive value of both fresh and pickled kareish cheese by estimating their major constituents.

MATERIAL AND METHODS

One hundred random samples of fresh and pickled kareish cheese (50 each) were collected from Assiut market. 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.

Physical Examination:

Each sample was subjected to organoleptic tests to detect any deviation from normality.

Chemical Examination:

- Determination of total solids and water content: Five grams of the prepared sample were used. The method adopted was the same as A.O.A.C. (1965), using hot air oven.
- Determination of ash: Ash was estimated by the same method of A.O.A.C. (1965).
- Determination of fat percent: DAVIS method (1952) was used for estimation of fat percent.
- Determination of protein content: LING method (1963) used.
- Determination of sodium chloride content: The method used for determination of sodium chloride, is cited after HELMY (1960).
- Determination of titratable acidity (O'CONNOR, 1969): Acidity percent was determined by the standard method using N/9 sodium hydroxide solution.

RESULTS AND DISCUSSION

All results obtained from this work have been statistically analysed and registered in (Table 1 and 2).

Physical examination of the collected fresh kareish cheese (Table 1) revealed that 98% of the examined samples had normal odour, while putrifid 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 76% 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 putrifid odour was

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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 the 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 for determination of moisture, total solids, fat, protein, ash sodium chloride and titratable acidity contents revealed that mean value of these constituents 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%, 18.99%, 12.68%, 9.37% and 1.75%, respectively (Table 2).

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

The Egyptian Food Acts and Regulations specify Kareish cheese is that which its fat percentage to total solids including sodium chloride is less than 20%.

From the results obtained, it is evident that 18 samples concise with the legal requirements, also 42% of examined samples contain higher moisture content than the legal requirements.

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

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Table I
Organoleptic characteristics of examined fresh and
pickled kareish cheese

	Fresh kareish cheese		Pickled kareish cheese	
	No. of sample	%	No. of sample	%
Odour				
Normal	49	98	49	98
Putrified	1	2	1	2
Taste				
Normal	33	66	39	78
Salty	12	24	--	--
Bitter	5	10	11	22
Consistency & Defects				
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
Chemical constituents of fresh and pickled
kareish cheese

Constituent %	Fresh			Pickled		
	Max.	Min.	Mean	Max.	Min.	Mean
Moisture	78.70	54.30	69.56	69.80	54.20	60.88
Total solids	45.70	21.30	30.44	45.80	30.20	39.12
Fat	14.50	0.10	5.58	14.50	1.75	6.41
Protein	22.17	10.88	17.49	24.43	13.40	18.99
Ash	11.40	2.20	6.15	18.75	2.75	12.88
Sodium chloride	7.27	0.35	4.66	17.10	2.74	9.37
Acidity	1.90	0.20	0.77	2.24	1.00	1.75

Table (3)

Author	Year	Type of cheese	Moisture	Total solid	Fat	Protein	Ash	Sodium chloride	Titrat. acidit.
EL-KATIB	1942	Fresh	67.98	32.02	4.16	16.63	8.77	---	---
HAMDY		Mish	70.22	29.78	2.55	10.04	15.46	---	---
	1949	Mish	---	---	---	---	---	3.45-	---
								21.96	---
FAHMY	1950	Fresh	66.46	---	---	---	---	---	---
EL-SADEK AND ABDEL-MOTTALEB	1959	Fresh	70.12	29.87	5.90	---	---	4.88	---
MOURSY AND NASR	1964	Fresh	---	---	---	---	---	6.67	1.69
EL-SADEK et al.	1968	Fresh	---	---	---	---	---	5.52	1.5
ABDEL-RAHMAN	1972	Fresh	64.79	35.29	8.48	18.76	7.66	6.26	0.978
	1975	Fresh	69.56	30.44	5.58	17.49	6.15	4.66	0.77
Our results		Pickled	60.88	39.22	6.41	18.99	12.68	9.37	1.75