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Introduction:

Healthy foods are self-prescribed food items that consumers believe that such types of food stuffs have special properties to promote health or to prevent or cure disease. The connotation is that healthy foods are invested with special health promoting properties. The term "health food" encompasses both organic and natural foods, along with certain other foods. Emphasis is generally placed on particular foods rather than on nutrients **(21. 426-427)**.

There is nothing wrong with the use of most items in the health food groups. However, there are some, which may have adverse effects if consumed in large quantities. Their efficacy is usually attributed to the presence of some protective or accessory food factor necessary for health but absent from other foods. There is no evidence that people who eat healthy foods enjoy better health or that special deficiency diseases exist in the general population; **(21. 426-427)**.

Biscuits have become a traditional and significant food in many countries. Their variety in form and taste combined with long shelf life and convenience of use have perpetuated their popularity. Biscuits are not normally complement to other food. They are not thought of as a source of nutrition. The great majority of biscuits are rich in sugar, fat and in many cases, the fat is of a "tropical" saturated type. Investigations of human health related to eating have identified high intakes of fats and particularly saturated fats as a contributing factor in heart disease. Furthermore, high sucrose levels in the diet are considered to be detrimental to health and a major factor in the incidence of dental caries; **(6. 223).**

Biscuits comprise a growth sector benefiting from the breakdown, within the developed markets, of formal eating patterns. This dynamic market, which is becoming more sophisticated and increasing in value, yields numerous opportunities for anyone who is involved in or thinking of entering it; **(20. 600).**

Biscuit making has progressed over the past 50 years from a very labour-intensive craft-based industry to the moderately labour-intensive but well mechanized semi-science-based industry of today. The profitability of biscuit making in common with that of most other sections of the food industry has remained rather low. This is particularly the case in the UK where the emphasis has been on mass production rather than specialties. Much biscuit making machinery was so well built that it has functioned adequately for a long time and in terms of sophistication. These factors have resulted in a situation where change has been slow and the demands to understand the technology have been correspondingly low; **(8. 177).**

The biscuit market in most countries is dynamic; demanding new products or changes in packaging and at the same time is very competitive. New product development can be very expensive and must be carefully managed to produce. Most of the new product development activity is the responsibility of technologists and falls within the scope of the technical department; **(6. 26).**

The current labelling rules were too stringent, and constrained development of reduced-fat bakery products. Products with lower fat levels are harder to make due to altered handling and processing properties. Their quality is usually poorer than standard products, particularly for flavour, texture and mouthfeel. The perception of freshness is reduced and product shelf-life may consequently be

shorter. For the product developer, there are relatively few ingredients that can be used in place of fat, and knowledge of how they work is limited, which inhibits product development; **(18. 489-496).**

The objective of this research was carried out to prepare biscuits from different lipids and oil such as butter, butter oil, margarine, vegetable oil and cream. Therefore, studying the chemical analysis, rancidity of fats and minerals analysis as well as sensory evaluation of different biscuits immediately after the preparation and during storage for 6 months were carried out. The research also compared of the obtained data with the biscuits samples collected from Cairo markets.

Materials and Methods:

Materials:

*** Samples of biscuits were divided into two groups:**

1- Five samples were taken from different private processors in Cairo Markets.

2-Other five samples of biscuits were prepared by different lipids and oil (Butter, Butter oil, Margarine, vegetable oil and Cream). All samples were stored at (15 ºC ± 5 ºC) for 6 months.

Methods:

Chemical Analysis: moisture, ash, protein, fat, reducing sugar, starch, PH and total nitrogen were determined according to methods described in the; **(2. 777-782, 789).**

Rancidity of Fats: saponification number, acid value, ester value, peroxide value and iodine number were determined according to the method of the; **(2. 955-962)** in the Central Laboratory, Ain Shams University.

Minerals Analysis: Micro elements as mg/100g (Fe, Ca, Na and Cu) and Trace elements as PPm (Pb, Cd, As and Hg) were determined using the Atomic Absorption available at the Central Laboratory, Ain Shams University. The method was given in details in the**; (2. 242, 273).**

Sensory Evaluation: Ten panelists evaluated the biscuits samples of the Cairo Market and samples prepared of laboratory in the different lipids according to; **(10. 165).**

Results and Discussion:

Chemical Analysis:

Changes in chemical constituents of biscuits samples stored during 6 months are presented in Table (1). It could be noticed that, the moisture of biscuits samples increased gradually during storage period and the incremental changes of moisture were 1.272%, 1.309%, 1.528%, 1.047% and 0.766% respectively for butter, butter oil, margarine, vegetable oil and cream.

Data indicated that, the ash also increased during storage time. The mean value of ash was 0.263%, 0.252%, 0.256%, 0.257% and 0.383% respectively for butter, butter oil, margarine, vegetable oil and cream. **(15. 216-223)** it showed that there is a considerable relative variation in ash from 0.9 to 6.7% in biscuits.

The protein value increased in prepared biscuits samples than the mean value of protein in the biscuits samples obtained from Cairo markets. On contrary, the protein value decreased during storage from 7.057% to 6.90%, 6.904% to 6.79%, 6.964% to 6.75, 6.844% to 6.75% and from 8.024% to 7.20% when compared with prepared samples and after 6 months of storage for butter, butter oil, margarine, vegetable oil and cream.

Whereas flour protein content was highly and positively correlated with test weight, grain size, flour yield and dough development time. Flour yield was positively correlated with test weight and grain size. Varieties such as Dashen,Galama, Megal and Abola exhibited good baking quality due to high quality gluten and high water absorption capacity. The other test varieties tended to be more suitable for biscuit making; **(13. 87-96)**.

The results showed that, the values of fats were in agreement with those reported by **(7. 2)** who reported that sample didn't increas than 8% of fats. On contrary, the changes % of fat value in the prepared biscuits of margarine was higher than the changes % of all other samples (6.124%). These results are in agreement with those reported by **(4. 141-146)** who concluded that sweet biscuits contained the highest protein (8.9 g). The highest fat content per serving was observed in baked products (14.4 g).

The data given in Continue of Table (1) showed the chemical constituents of prepared biscuits samples. The prepared biscuits of cream contained the highest reducing sugars and starch content (8.523% and 48.253%) but the lowest were recorded in the prepared biscuits of margarine (reduce sugars 8.323%) and of vegetable oil (starch 47.09%). Processed products had significantly higher starch digestibility compared to raw products. Thus, it can be concluded that roasting and baking are effective means of improving starch availability of products; **(16. 151-160).**

The investigated samples showed that pH content increased gradually with increasing the storage time. The initial pH content of prepared biscuits samples was found to be 4.35, 4.50, 5.56, 6.40 and 4.20 for butter, butter oil, margarine, vegetable oil and cream at zero time of storage. **(11. 83-85)** indicated that the study of 76 samples representing 38 types of low-moisture foods such as biscuits showed that pH ranged from 7.23 to 7.98 in dry biscuits The mean pH in biscuits ranged of 6.72, 6.27 and 6.26.

Table (1) Changes in some chemical constituents of the prepared biscuits samples during storage for 6 months at (15 °C ± 5 °C)

Tested Samples	Storage period (months)				Mean	Change %	Storage period (months)				Mean	Change %
	0	2	4	6			0	2	4	6		
	Butter						**Butter oil**					
Moisture	3.30	3.35	3.39	3.39	3.358	1.272	2.78	2.81	2.85	2.86	2.825	1.309
Ash	0.26	0.262	0.264	0.264	0.263	0.729	0.250	0.251	0.253	0.255	0.252	0.879
Protein	7.057	7.044	6.91	6.90	6.978	1.208	6.904	6.845	6.79	6.79	6.832	0.796
Fat	7.6	7.6	7.31	7.09	7.4	3.349	11.63	11.31	11.08	11.01	11.26	2.482
	Margarine						**Vegetable oil**					
Moisture	3.40	3.49	3.50	3.52	3.478	1.528	2.82	2.84	2.86	2.89	2.853	1.047
Ash	0.250	0.258	0.258	0.259	0.256	1.636	0.250	0.257	0.259	0.260	0.257	1.758
Protein	6.964	6.79	6.75	6.75	6.814	1.498	6.844	6.755	6.75	6.75	6.775	0.682
Fat	8.12	8.05	7.89	7.70	8.14	6.124	11.02	11.02	10.97	10.81	10.96	0.908
	Cream											
Moisture	3.42	3.45	3.47	3.48	3.455	0.766						
Ash	0.380	0.383	0.385	0.385	0.383	0.617						
Protein	8.024	7.555	7.21	7.20	7.497	5.175						
Fat	5.062	5.62	0.040	5	5.181	5.677						

Continue of Table (1) Changes in some chemical constituents of the prepared biscuits samples during storage for 6 months at (15 °C ± 5 °C)

Component	Storage period months				Mean	Change %	Storage period months				Mean	Change %
	0	2	4	6			0	2	4	6		
	Butter						Butter oil					
Reduce sugars	8.34	8.34	8.33	8.33	8.335	0.069	8.33	8.32	8.32	8.32	8.323	0.060
Starch	47.24	47.22	47.21	47.18	47.21	0.053	47.17	47.16	47.14	47.14	47.15	0.032
PH	4.35	4.37	4.38	4.38	4.37	0.324	4.50	4.54	4.56	4.59	4.548	0.830
	Margarine						Vegetable oil					
Reduce sugars	8.33	8.33	8.32	8.31	8.323	0.115	8.54	8.40	8.32	8.32	8.395	1.236
Starch	47.17	47.16	47.13	47.12	47.15	0.050	47.14	47.17	47.07	46.96	47.09	0.198
PH	5.56	5.57	5.57	5.58	5.57	0.147	6.40	6.44	6.46	6.50	6.45	0.645
	Cream											
Reduce sugars	8.53	8.52	8.52	8.52	8.523	0.059						
Starch	48.35	48.30	48.29	48.07	48.253	0.258						
PH	4.20	4.23	4.26	4.28	4.243	0.825						

The results given in Table (2) showed the chemical constituents of biscuits samples obtained from Cairo markets. It could be seen that the mean value of moisture and protein were lowered in the biscuits samples from Cairo markets (0.75% and 6.22%) than the mean value of moisture and protein in the prepared biscuits. The chemical composition of biscuits, collected from 106 randomly selected bakeries around Peshawar and Mardan in Pakistan, was analyzed. The average chemical composition of these biscuits was 5.58% protein, 28.05% fat, 0.47% ash, 1.46% fiber and 57.27% carbohydrates. The average energy content of the biscuits was 518 Kcal/100 g. In general, the biscuits were low in protein, but high in fat and energy; **(9. 279-283).**

Experimental results showed also that there is significant level between the biscuits samples from Cairo markets and the prepared biscuits samples in reducing sugars and starch ; i.e 0.003. Higher sugar content increased the spread and the thickness of the biscuits. Significant decrease occurred in the density (from 632.6 to 513.5 kg/m3) and compressive strength (from 118.4 to 89.2 kg), indicating an improvement in the texture; **(14. 383-390)**. These results are in agreement with those reported by **(12. 301-308)** who showed that the biscuits produced in France had starch 63.5-g/100 g. which was greater than that for bread. Digestibility of the starch in vitro olds estimated using amyloglucosidase and alpha-amylase was 62.5%.

It is clear from the same Table (2) that the ash and protein were higher in the biscuits samples from Cairo markets than the prepared biscuits samples. The percentage of increase value between the two groups of samples was (28.22% in the ash). The nutritive value of traditionally prepared wheat products was determined and compared with that of other cereal-based products commonly consumed in Karnataka, India. Results revealed that in raw form,

wheat had the highest protein (12.1 g for wheat flour) and fat contents (1.6 g for wheat flour). In cooked wheat products, moisture content was low in baked products (0.1-0.3 g). Fat content was high in baked products (6-33 g). Of the 14 wheat products analyzed, the highest fat content per serving was observed in baked products (14.4 g) and ash content per serving was highest in baked products (2.1 g); **(4. 141-146)**.

The results proved that the mean value of fat and pH were higher in the biscuits samples obtained from Cairo markets (13.48% and 5.394%) than the prepared biscuits (8.548% and 5.036%). However, it is clear from the results that the percentage of trans fatty acids in the total fat content is significant because of the use of hydrogenated vegetable oils in biscuit production; **(5. 41-44)**.

Table (2) Chemical constituents of biscuits samples obtained from Cairo Markets (g/100g sample)

No. Of Commercial Samples	Moisture	Ash	Protein	Fat	Reducing sugars	Starch	pH
1	0.71	1.2	5.1	15.1	5.54	31.38	4.2
2	0.61	0.7	6.1	15.6	4.76	26.96	6.5
3	0.74	1.6	7.2	10.1	5.77	32.71	4.23
4	0.93	0.7	6.8	13.3	7.25	41.11	5.58
5	0.76	0.8	5.9	13.3	5.93	33.59	6.46
Mean	0.75	1	6.22	13.48	5.85	33.15	5.394
P ≥ 0.05	1.911	0.014	0.108	0.369	0.003	0.003	0.604

Rancidity of Fats:

The data given in Table (3) shows the rancidity of fats of prepared biscuits samples stored for 6 months. The saponification number of prepared biscuits increased gradually during the storage period and the incremental changes of saponification number were 11.95%, 4.482%, 11.13%, 3.536% and 5.223% for butter, butter oil, margarine, vegetable oil and cream.

The acid value increased gradually during the storage time among all prepared biscuits from 1.90 to 2.50, 4.94 to 5.45, 2.54 to 3.29, 5.20 to 5.64 and 2.66 to 3 for arrangement the prepared biscuits samples in the Table (3). On the other hand, the mean level of ester value was higher in the prepared biscuits samples from vegetable oil (151.9).

According to the data of the same table a slight decrease in the peroxide value of prepared biscuits samples as a result of storage up to 6 months was noticed. The initial value of peroxide value was 4.94, 12.85, 6.59, 13.51 and 6.92 for butter, butter oil, margarine, vegetable oil and cream respectively. On contrary, the change% value of iodine number in the prepared biscuits samples of vegetable oil was lowest (3.664%) than the higher change % value of iodine number was 13.19% in the prepared biscuits samples of butter. (1. 1659-1671) reported that the butter oil resulted in good stability upon storage. Stability was in parallel with propolis concentration. The peroxide value of treated, untreated butter oil and those extracted from baked biscuits during the 8-month storage showed the same trend as that of Rancimat.

Table (4) showed that, the all parameters of rancidity of fats were higher in the biscuits samples obtained from Cairo markets than the prepared biscuits samples. On the other hand, the significantly levels of iodine number between the two groups samples were 0.003.

Table (3) Rancidity of fats of prepared biscuits samples during storage for 6 months at (15 °C ± 5 °C)

Tested Samples	Storage period (months)				Mean	Change %	Storage period (months)				Mean	Change %
	0	2	4	6			0	2	4	6		
	Butter						Butter oil					
S.N.	55.97	65.29	72.76	72.76	66.7	11.95	145.5	151.1	158.6	160.4	153.9	4.482
A.V.	1.90	2.22	2.47	2.50	2.273	12.24	4.94	5.13	5.39	5.45	5.228	4.528
E.V.	53.55	62.47	69.61	69.65	63.82	11.96	139.2	144.6	151.7	153.5	147.3	4.482
P.V.	4.94	5.77	6.43	6.51	5.913	12.32	12.85	13.35	14.01	14.17	13.59	4.490
I.N.	0.45	0.53	0.59	0.61	0.545	13.19	1.17	1.22	1.28	1.29	1.24	4.514
	Margarine						Vegetable oil					
S.N.	74.62	91.41	93.28	97.01	89.08	11.13	152.9	156.7	160.4	166.1	159.03	3.536
A.V.	2.54	3.11	3.17	3.29	3.028	11.02	5.20	5.32	5.45	5.64	5.403	3.487
E.V.	71.4	87.46	89.23	92.82	85.23	11.13	145.4	149.9	153.5	158.9	151.9	3.758
P.V.	6.59	8.07	8.24	8.57	7.868	11.14	13.51	13.84	14.17	14.67	14.05	3.522
I.N.	0.60	0.74	0.75	0.78	0.718	11.17	1.23	1.26	1.29	1.34	1.28	3.664
	Cream											
S.N.	78.35	83.95	87.68	87.68	84.42	5.223						
A.V.	2.66	2.85	2.98	3	2.873	5.448						
E.V.	74.97	80.32	83.89	83.91	80.77	5.225						
P.V.	6.92	7.42	7.75	7.78	7.468	5.354						
I.N.	0.63	0.68	0.71	0.76	0.695	7.837						

S.V.= Saponify Value A.V.= Acid Value E.V.= Ester Value P.V.= Peroxide Value I.N. = Iodine Value
Saponification Number and Acid Value = (m. gm. KOH/ gm. Oil)
Peroxide Value and Iodine Number = (millieguivalents/ Kg oil)

The results proved that, the mean values of saponification number and ester value were 191.9 and 184.7 in the biscuits samples from Cairo markets than the same parameters in the prepared biscuits samples (110.63 and 105.80). (19.165-166) proved that the analysis of the ghee residue obtained from Anantapur dairy (India) showed the fat content to be 60.4%. The shelf-life of the ghee residue stored in plastics, glass and tin containers for 90 days showed no significant changes in free fatty acid content, peroxide value and tintometer readings, Ghee residue could replace 100% of butter in cakes, and the incorporation in cakes, biscuits and a few supplementary foods improved the flavour and the acceptability scores.

The investigated samples showed that, the percentage of increase level between the biscuits samples from Cairo markets and the prepared biscuits samples from acid value and peroxide value were 50.82% and 26.64%.

Table (4) Rancidity of fats of biscuits samples obtained from Cairo Markets

No. Of Commercial Samples	saponification Number (m. gm. KOH/ gm. Oil)	Acid Value (m. gm. KOH/ gm. Oil)	Ester Value	Peroxide Value (millieguivalents/ Kg oil)	Iodine Number (millieguivalents/ Kg oil)
1	197.3	4.5	192.8	11.7	2
2	187.8	11	176.8	30.8	2
3	190.1	5.5	184.6	33.7	2.1
4	173.5	7.5	166	85	1.4
5	211.1	8.5	202.6	22.3	1.5
Mean	191.9	7.4	184.7	36.7	1.8
P ≥ 0.05	0.011	0.031	0.009	0.1005	0.003

Minerals Analysis:

Values of minerals analysis of prepared biscuits samples during storage for 6 months are given in the Table (5). The highest microelement of Fe and Na was noticed in the prepared biscuits samples of butter (1.82 mg/100g and 222.08 mg/100g). 0n the other hand, the prepared biscuits samples of vegetable oil contained the lowest value in all micro element under investigated Fe (0.752 mg/100g), Ca (22.74 mg/100g), Na (23.08 mg/100g) and Cu (0.233 mg/100g).

From the previous results, the change % level of Na in the all prepared biscuits samples was 102.4% but the change% level of Cu in the same samples was 5.993%. These results agree with those reported by **(17. 200-203)** who reported the enriched biscuits produced from wheat flour having the highest concentrations of Fe and were about 150 a, respectively, richer in those elements in comparison with classic white flour biscuits of Petit Beurre type. Data show that wheat flour based hard biscuits, particularly enriched biscuits, can be considered as a good additional source of Fe in diets. **(4. 141-146)** showed that the determinations was calcium and iron in baked products which had more than 20 mg of calcium per serving and the highest iron content per serving (4.9 g).

The trace element in the same table showed that, all the prepared biscuits samples under investigation were free completely of Hg and As. While the Pb was higher in the prepared biscuits of margarine 0.285 ppm and the level of Cd was similar trend 0.0002 to 0.0003 in the prepared biscuits samples.

Table (6) showed the mineral content of biscuits samples obtained from Cairo markets. The mean value of Fe and Ca were lowest in the biscuits samples from Cairo markets (0.375 mg/100g and 21 mg/100g) than the prepared

biscuits samples (1.173 mg/100g and 28.036 mg/100g). While the mean value of Na and Cu were higher in the same biscuits samples from Cairo markets (520.9

Table (5) Minerals analysis of the prepared biscuits samples during storage for 6 months at (15 ºC ± 5 ºC)

Tested Samples	Micro-element mg/100g				Trace- element PPm			
	Fe	Ca	Na	Cu	Hg	As	Cd	Pb
Butter	1.82	25.94	222.08	0.237	ND	ND	0.0002	0.241
Butter oil	0.752	27.94	24.08	0.237	ND	ND	0.0003	0.182
Margarine	0.76	22.82	155.88	0.241	ND	ND	0.0002	0.285
Vegetable oil	0.752	22.74	23.08	0.233	ND	ND	0.0002	0.244
Cream	1.78	40.74	28.08	0.269	ND	ND	0.0003	0.171
Mean	1.173	28.036	90.64	0.2434	-	-	0.00024	0.2246
Change %	48.83	26.52	102.4	5.993	-	-	22.82	21.1

Table (6) Minerals analysis of biscuits samples obtained from Cairo Markets

No. Of Commercial Samples	Micro-element mg/100g				Trace- element PPm			
	Fe	Ca	Na	Cu	Hg	As	Cd	Pb
1	0.355	19.88	761.6	0.96	ND	ND	0.004	7.7
2	0.305	17.08	173.2	0.75	ND	ND	0.0005	8.4
3	0.37	20.72	639.7	0.58	ND	ND	0.003	7.1
4	0.465	26.04	134.6	0.77	ND	ND	0.005	8.3
5	0.38	21.28	895.6	0.97	ND	ND	0.005	6.8
Mean	0.375	21	520.9	0.806	-	-	0.0035	7.66
P ≥ 0.05	0.0353	0.1052	0.0483	0.0014	-	-	0.0176	1.8389

mg/100g and 0.806 mg/100g) than the other prepared biscuits samples. **(15. 216-223)** showed that the variability is due to analyst, laboratory and production batch. Biscuits were examined, sodium ranged from 6.2 to 16.7, potassium from 5.0 to 23.0 of low nutrient values.

The obtained results clearly proved that the biscuits samples from Cairo markets were free completely of Hg and As. On the other hand, the significant level of Cd and Pb between the biscuits samples from Cairo market and prepared biscuits samples were 0.0176 and 1.8389.

Sensory Evaluation:

Organoleptic evaluation of the biscuits samples under investigation is given in Table (7). The overall quality given by the tested individuals varied between 6.9 to 7.8 with a corresponding overall quality of 82.22 in the prepared biscuits samples of butter under zero time. While the overall quality of the prepared biscuits samples of margarine under zero time was 65.

The sensory attribute of prepared biscuits samples after 6 months of storage showed that the overall quality of the prepared biscuits samples of vegetable oil was less than the overall quality of the prepared biscuits samples of butter (58.33, 80.8). The previous results proved that the level of overall quality of the biscuits samples obtained from Cairo markets showed the lowest value (57.2 to 76.94) than the prepared biscuits samples under zero time (59.72 to 82.22) and the prepared biscuits samples after 6 months of storage (58.33 to 80.8). **(3. 506-509)** proved that the effect of headspace composition on sensory perception of and consumer preferences for biscuits was investigated. The biscuits showed significant differences in sensory attributes, as defined by a sensory descriptive test, involving the rating of 23 sensory attributes by a trained different sensory profiles. Furthermore, the biscuits were presented to a group of 140 consumers and evaluated for overall preferences. The relationship between

sensory panel. The headspace composition above the biscuits was measured using atmospheric pressure ionization mass spectrometer and was related to the headspace composition, sensory properties and consumer preferences was investigated by multivariate analysis.

Table (7) Sensory evaluation of the biscuits samples under investigation

Tested Samples	**Sensory attribute after preparation**					
	Color	Taste	Aroma	Appearance	Total Sum	Over All Quality
Butter	7.7	7.1	6.9	7.4	29.1	80.8
Butter oil	7.2	7.0	7.0	6.8	28	77.78
Margarine	6.6	6.0	5.6	5.2	23.4	65
Vegetable oil	5.0	5.1	5.2	5.7	21	58.33
Cream	6.8	7.0	7.2	6.8	27.8	77.22
Tested Samples	**Sensory attribute after 6 month of storage**					
	Color	Taste	Aroma	Appearance	Total Sum	Over All Quality
Butter	7.8	7.3	6.9	7.6	29.6	82.22
Butter oil	7.1	7.2	7.0	6.6	27.9	77.5
Margarine	4.3	5.8	6.4	5.5	22	61.11
Vegetable oil	5.0	5.7	5.2	5.6	21.5	59.72
Cream	6.8	6.6	6.9	6.8	27.1	75.28
No. Of Commercial Samples	**Sensory attribute of biscuits samples obtained from Cairo market**					
	Color	Taste	Aroma	Appearance	Total Sum	Over All Quality
1	5.6	5.0	4.3	5.7	20.6	57.2
2	6.6	6.4	6.8	6.0	25.8	71.67
3	6.4	6.4	5.7	5.6	24.1	66.94
4	7.2	7.1	6.8	6.6	27.7	76.94
5	6.0	6.6	5.8	5.7	24.1	66.93

Conclusion:

Using different kinds and percentage of lipids affect on quality biscuits whereas the research proved that the prepared biscuit samples of butter was the best biscuits in rancidity of fats and sensory attribute while the chemical constituents and mineral analysis were in agreement with those reported by E.O.S. The study showed that the biscuits samples obtained from Cairo market were higher in the rancidity of fats, micro element (Na, Cu) and trace element (Cd, Pb) these results didn't agree with those reported by E.O.S.

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