LEBANON

FOOD COMPOSITION DATA:
Traditional Dishes, Arabic Sweets and Market Foods

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PREFACE

Food composition data provides information on what is in the foods we eat and is considered the fundamentals of food-based dietary guidelines for healthy nutrition. Food composition data is the bridge between nutrition, health promotion, disease prevention, and food production.

Several governments have developed food composition tables and dietary guidelines that can be used by different countries. In Lebanon, available data on nutrient composition of foods frequently consumed are scarce. Therefore, a broad nutrient analysis on a selection of foods most frequently consumed in the country is essential to generate national food composition data.

This report provides data on nutrient composition of a range of traditional dishes, Arabic sweets, and market foods most commonly consumed in Lebanon. This will guide national and regional governments on the operational priorities they need to focus on in the implementation of food-based approaches to reduce the burden of malnutrition, obesity, mineral deficiencies, non-communicable diseases in the population and support nutrition-sensitive programs.

ACKNOWLEDGMENT

ACRONYMS

AOAC	Association of Official Analytical Chemists
CHO	Carbohydrate
DV	Daily Values
FAO	Food and Agriculture Organization
Kcal	Kilo Calorie
MUFA	Monounsaturated fatty acid
M:S	Monounsaturated fatty acid: Saturated fatty acid ratio
PUFA	Polyunsaturated fatty acid
P: M: S ratio	Polyunsaturated fatty acid: Monounsaturated fatty acid: Saturated fatty acid ratio
P: S	Polyunsaturated fatty acid: Saturated fatty acid ratio
P: M	Polyunsaturated fatty acid: Monounsaturated fatty acid ratio
RDI	Recommended Dietary Intakes
SFA	Saturated fatty acid
TFA	Trans Fatty Acids
Vit A	Vitamin A
Vit C	Vitamin C
Vit D	Vitamin D
Vit E	Vitamin E
WHO	World Health Organization

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EXECUTIVE SUMMARY ———

The current food composition report was developed following systematic laboratory and analytical methodologies to explore the composition of a wide range of traditional dishes, Arabic sweets and market foods most commonly consumed in Lebanon, in terms of macronutrients and micronutrients contents and fatty acid profile and ratios. The report builds on the available food research data and provides recent data for use at national and international levels.

The food sampling and analysis process was divided into two phases. For phase 1, a total of 30 traditional dishes (150 samples from 5 geographical areas in Lebanon) identified as most frequently consumed were analysed for total fat, saturated fat, monounsaturated fat, polyunsaturated fat, trans fatty acids (TFA), salt, total sugar, vitamin D and iron. At the same time, 37 types of Arabic sweets (51 samples from Beirut and Mount Lebanon) and 46 samples of market food products identified as most frequently consumed were analysed for total fat, saturated fat, monounsaturated fat, polyunsaturated fat, and TFA. For phase 2, and as a second phase of funding was received, samples of traditional dishes and Arabic sweets were collected from the same list of foods identified in order to complement food analysis with carbohydrate, protein, fat, ash, energy in Kcal, fibre, vitamin A, vitamin E and vitamin C.

Main results for the traditional dishes are as follows. No statistical difference was found in the analyzed samples across the different regions. The total sugar content of most of the traditional dishes was less than 3 grams per 100 grams of the food sample. A high sodium content was observed with a daily value exceeding 20% in more than half of the traditional dishes collected. More than 60% of dishes were found to be deficient in iron (less than 10% of the daily value). More than 90% of the dishes contained less than 5% of saturated fatty acids and the large majority of food dishes were considered poor sources of polyunsaturated fatty acids with only 2% containing more than 20% of the daily value for polyunsaturated fatty acids. All dishes except two achieved less than 5% of the daily value for TFA. Almost all dishes contained trace amounts of vitamin A, D, E and C. Among all the dishes, 23% were considered good sources of fibre and almost all the remaining contained little amounts.

As for Arabic sweets, the majority contained a carbohydrate amount exceeding 20% per 100 grams of each sample and protein content was low in 100 grams of almost all sweets. Around one third of the samples contained more than 20% of fat and none contained TFA. In addition, 100 grams of an Arabic sweet sample covers between 10% to 27% of the daily need for energy in a 2000 Kcal-diet. Overall, all samples of Arabic sweets contained trace amounts of vitamin A, vitamin E, and vitamin C. Around 30% of the samples contained an amount that exceeds 5% of the daily value of fibre.

In terms of market food items, all products were found to have discrepancies in reporting the actual nutrient content when compared to their respective nutrition facts label.

BACKGROUND _____

Food composition tables provide information on nutrient composition and nutritional value of food. They are often used as guides to the amount of energy and nutrients in 100 grams of a food portion (Emmet et. al, 2019). Food composition tables are commonly used in the health, nutrition, agriculture and trade sectors. Food composition data are used to evaluate dietary adequacy of individuals or groups at national and international levels, and to develop diets with specific nutrient composition in clinical practice. Food composition data also provides estimates of nutrient availability per capita which allows assessing a region's food supply system.

Recognizing the involvement of diet in the development of many diseases has led several scholars to focus on the relationship between diet and health, which has led to a greater focus on nutrient data. Some of the various users that can also benefit from food composition data include epidemiologists, health and nutrition educators, healthcare professionals, food and agricultural scientists, and the general public. As such, they remain of significant use in the area of research and development, and particularly applicable and essential to research that explores the relationship between diet, health, and disease (WHO, 2013).

Compiling food composition data can be done using direct or indirect methods or a combination of both. The direct method relies on values that are of analyses carried out in chemical laboratories whereas the indirect method relies on data retrieved from published literature or unpublished laboratory reports requiring validation for inclusion (Greenfield & Southgate, 2003). The majority of the food composition databases compiled recently are prepared by a combination of the direct and indirect methods, i.e. comprising original analytical values together with values taken from the literature and from other databases (Greenfield & Southgate, 2003).

The International Network of Food Data Systems (INFOODS) supports food composition activities and coordinates efforts to improve the quality and availability of food analysis data worldwide. Established in 1984, it operates under the auspices of the Food and Agriculture Organization of the United Nations (FAO) and the United Nations University (UNU) (Scrimshaw, 1994).

The level of certain nutrients available in some foods may vary between countries. This is attributed to differences in the countries' climates, agricultural practices, processing procedures and analytical methods. In addition, several traditional dishes with the same names may show different organoleptic, analytical and nutritional characteristics between countries or even between regions in the same country. Consequently, developing a country specific food composition database which includes traditional dishes that are frequently consumed by the population is important to ensure that food composition tables accurately reflect the country available food.

The current food composition tables available in the Middle East and North Africa (MENA) region were designed to include analysis on the foods consumed by individuals in these regions and were further elaborated to be used in conjunction with nutrition studies and surveys (FAO, 2017). To date, several publications on the nutrient composition of traditional foods in Kuwait, Bahrain, Jordan, Kingdom of Saudi Arabia, Oman, Qatar and United Arab Emirates (UAE) were made (Sawaya et al., 1998; Dashti et al., 2001; Dashti 2004; Al-Amiri et al., 2011; Kalender et al., 2019; Musaiger, 1983, 1988, 2002, 2011; Bawadi, 2008; Bawadi et al., 2009; Al-Faris, 2017; Al Nagdy & Abd-El Ghani & Abdel-Rahman, 1994; Habib & Ali & Ibrahim & Afifi, 2011).

The INFOODS published the first food composition table for the Near East Region in 1982 covering: Afghanistan, Bahrain, Cyprus, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Oman, Pakistan, Qatar, Saudi Arabia, Somalia, Sudan, Syria and Yemen. The first food composition table for Egypt was elaborated in 1975, then in 1996 and 2006 (FAO, 2017), whereas the first food composition table for Iran was published in 1980 and thereafter elaborated in 2016 (Azar & Sarkisian,1980; Hosseini et al., 2016). Furthermore, several food composition tables for Bahraini foods were published between 1985 and 2012 (Musaiger, 1985, 1995, 1998, 2002, 2006, 2011, 2012). Other tables were developed in Kuwait in 1982 and in the Kingdom of Saudi Arabia between 1979 and 1999 (Al-Jebrin et al., 1985; Al-Attas & Sulimani, 1993). A recently established food composition database was developed by Kuwait and the Kingdom of Saudi Arabia to analyse and include 602 recipes (Kalender et al., 2019). Figure 1 below provides a summary of the food composition tables in the Near East Region.

Figure 1. Summary of food composition tables in the Near East Region

Food Composition Table	Year of publication
Food composition table for the Near East region (Afghanistan, Bahrain, Cyprus, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Oman, Pakistan, Qatar, Saudi Arabia, Somalia, Sudan, Syria and Yemen)	1982
Food composition tables for Egypt	1975; 1996; 2006
Food composition tables for Iran	1980; 2016
Food composition tables for Bahrain	1985; 1995; 1998; 2002; 2006; 2011; 2012
Food composition table for Kuwait	1982
Food composition tables for Saudi Arabia	1979 - 1999
Food composition database for Kuwait and Kingdom of Saudi Arabia	2019

Food composition data also helps in developing food exchange lists, a user-friendly tool for meal planning. Food exchange lists group foods together and help individuals follow a specific diet plan and lead healthy eating habits. They are used as a supplementary tool in dietary management of non-communicable diseases, weight maintenance and reduction, and when following a general healthy eating plan (Khan & Kulsoom, 2017; Marcus, 2013).

Food exchange lists have been developed for traditional Jordanian dishes, Greek-Mediterranean foods, Emirati traditional dishes, and Saudi traditional dishes (Bawadi, 2008; Bawadi et al., 2009; Detopoulou & Aggeli & Andrioti, 2017; Habib et al., 2011; Al-Faris, 2017).

As for Lebanon, the first food composition table was developed in early 1970s and was cited in the Food Composition Tables for Use in the Middle East (Pellet & Shadarevian, 1970). This was thereafter followed by the release of an analytical report on traditional foods in Mediterranean regions and Arab Gulf regions in 1998, which also covered some Lebanese traditional foods (Musaiger & Miladi, 1998). However, anecdotal evidence shows that the majority of health care professionals and educators in Lebanon rely on the American food composition tables, food pyramid, and American Dietetic Association (ADA) exchange list (ADA, 2007).

The majority of food composition data available for Lebanon are insufficient as they are either outdated or limited in terms of analytical data which is generated from laboratory analysis of food. For instance, certain nutrients such as the content of trans fatty acids and fatty acids are not analysed. At the same time, they are not inclusive of the traditional foods consumed by the Lebanese population, mainly with regards to new food items introduced over time. In addition, there is a gap in reporting and dissemination of data constituting a challenge to access such information.

There was a need to develop a country specific exchange list as the quality of food frequently consumed by individuals within a population plays a key role in determining their overall health and nutritional status. Research on nutritional status shows an increased prevalence of overnutrition reflected by high non-communicable diseases rates in Lebanon (Adib & Rady & Ammar, 2014). At the same time, individual studies reporting on food consumption patterns amongst adults show that the population is experiencing a nutrition transition with an increase in intake of total fats, trans fatty acids, and salt (Farhat et al., 2016). The rates of overweight and obesity have been on the rise in the last decade with 38% of adults being overweight and 27% being obese (Republic of Lebanon, Ministry of Health & WHO, 2017). It was important to reflect on the nutrient composition of country available foods and their nutritional quality through this report and to and provide guidance and recommendations on the way forward.

The current food composition report was developed in line with the goals and objectives of the National Nutrition Strategy and Plan of Action 2020-2026, to establish inclusive and updated food composition data for Lebanon and a national exchange list including traditional dishes frequently consumed by the population.

OBJECTIVES _____

The current study aims at:

a. Analyzing the nutrient profile of traditional dishes, Arabic sweets, and market foods frequently consumed in Lebanon for a selection of nutrients[1].

b. Providing a basis for the development of an elaborate exchange list for a variety of Middle Eastern traditional dishes and sweets frequently consumed in Lebanon.

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[1] *Analysis of carbohydrate, lipid, protein, vitamin A, vitamin E, vitamin C, vitamin D, fibre and energy content for traditional dishes and Arabic sweets.*
Analysis of total sugar, salt, TFA, and iron content in addition to fatty acid profile for traditional dishes.
Analysis of fatty acid profile and TFA content for market foods.

METHODOLOGY _____

The following section elaborates on the methodology adopted in this project and highlights the steps involved during the course of its implementation.

Food and nutrient selection and food lists identification

In the initial phase, a range of **traditional dishes, Arabic sweets**, and **market foods** were identified and selected for nutrient analysis. The traditional dishes and Arabic sweets were selected based on their frequency of consumption by the Lebanese population (Batal & Hunter, 2007; Issa et al., 2009).

Traditional composite dishes are defined as dishes consumed at main meals (i.e. lunch or dinner), containing ingredients from at least three of the five main food groups and requiring preparation using culinary skills (Issa et al., 2009). A total of **30 traditional dishes** were identified as most frequently consumed, and hence were included for analysis (Annex 1). The names of the food dishes were reported in the current analysis considering the most familiar name used for the dish at a national level with respect to its ingredients.

At the same time, a total of **37 types of Arabic sweets** were considered for analysis (Annex 2). These were selected given that they were the most sold in the market and as such most frequently consumed.

The **market foods** were randomly selected from supermarkets regularly visited by the citizens in Beirut and Mount Lebanon areas; **46 market food products** were included. These ranged from dessert items, bakery products, local and imported on the shelf market products, coffee, and nuts (Annex 5).

Moreover, the selection of the nutrient profile for analysis for each of the traditional dishes, Arabic sweets, and market foods was identified considering the following factors.
a. the availability of analytical resources and adequate methods;
b. the feasibility of analytical work;
c. the need for nutrient information;
d. the requisite for investigating TFA content;
e. the availability of existing data (at method level);
f. national and international labelling regulations; and
g. the increased prevalence of health diseases, mainly of non-communicable diseases (WHO, 2020), osteoporosis (Bassatne et al., 2020), vitamin and mineral deficiencies (Hoteit et al., 2014 ; Asmar et al., 2018) in the Middle Eastern Regions.

Food sampling protocol and nutrient identification

The quality of sampling and analytical data are major determinants of the food database quality. It was important to ensure that the collection of food samples for analysis was evidence-based and comprehensive. The primary objective of the sampling phase was to collect food samples that represent the national dietary consumption of traditional dishes and to ensure that changes in composition do not occur between sample collection and analysis. A secondary objective was to document on variability as it relates to factors such as geography. For this purpose, the food samples were classified into five strata (Beirut, Mount Lebanon, Beqaa, Tripoli, and Saida) considering geographical area and cultural variations. This stratification was applied to the first batch of traditional dishes. In a single country there may be a wide diversity of soil and climatic conditions, resulting in significant variance in food composition. For this purpose, geographically specific data, for traditional dishes, were presented in this database as a supplement to nationwide and/or regionwide averages.

The food sampling process was divided into two phases (Figure 2). In phase 1, samples from the selected list of traditional dishes were collected and identified as batch 1. Considering consumption trends and heterogeneity of samples, selection from 5 different governorates was sufficient to represent food variability across the regions. As such, 500 grams of the 30 identified traditional dishes (150 samples) were collected from five different central kitchens in the following governorates: Tripoli, Beqaa, Beirut, Mount Lebanon and South Lebanon. The central kitchens were randomly chosen based on (1) their specialties in cooking home-made dishes, (2) their popularity in the area, (3) their implications in social entrepreneurship and women empowerment (e.g. household women who cook for these central kitchens). Consequently, the food samples were classified into 5 strata, per governorate area. For this batch (batch 1), total fat, saturated fat, monounsaturated fat, polyunsaturated fat, TFA, salt, total sugar, vitamin D and iron were considered for analysis.

At the same time, Arabic sweet samples were collected and identified as batch 2. While considering sample variability and consumption patterns, a sample of 500 grams from each of the 37 types of Arabic sweets served as a convenient guide in regard to the usual sweets portion size. The samples were collected from two different pastry shops that sell the sweets at different prices (total of 51 samples). Hence, stratification by the type of retail sale point as cheap or expensive was established. The sampling in Arabic sweets was considered semi-convenient – samples were bought if they were available for sale in the pastry shops. In addition, 46 samples of the selected market food products were purchased from supermarkets in Beirut and Mount Lebanon areas and were also identified as batch 2. For this batch (batch 2) of Arabic sweets and market foods, the following nutrients were considered for analysis: total fat, saturated fat, monounsaturated fat, polyunsaturated fat, and TFA.

A second phase of sampling and funding was then proposed to complement the food analysis results of the first phase. In phase 2, samples of traditional dishes and Arabic sweets were collected from the same list of foods identified and were marked as batch 3.

This second round of sampling was conducted 5 months after the initial one. The main purpose was to develop exchange lists for the traditional dishes and Arabic sweets. The sampling was considered selective since a total of 30 samples of traditional dishes were collected from Beirut central kitchen only. The samples were considered sufficient for analysis since analysis of the previous 150 samples showed that the variables tested were close and tend to be similar; no statistical difference (p=0.4) found across the regions. In addition, another 35 samples of Arabic sweets were purchased randomly from the same previous pastry shops. For this batch (batch 3) of traditional dishes and Arabic sweets, carbohydrate, protein, fat, ash, energy in Kcal, fibre, vitamin A, vitamin E and vitamin C were analysed.

Figure 2. Food sampling process

Phase 1			Phase 2
Batch 1	**Batch 2**		**Batch 3**
150 samples of traditional dishes	51 samples of Arabic sweets	46 market food products	30 samples of traditional dishes	35 samples of Arabic sweets
Analysed for total fat, saturated fat, monounsaturated fat, polyunsaturated fat, trans fat, salt, total sugar, vitamin D, and iron	Analysed for total fat, saturated fat, monounsaturated fat, polyunsaturated fat, and trans fat		Analysed for carbohydrate, protein, fat, ash, energy, fibre, vitamin A, vitamin E, and vitamin C

Handling of food samples

The handling, packaging and transportation procedures of the samples followed well-documented protocols in order to avoid any alterations that would affect analytical measures. The transportation and storage protocol identified the arrangements for transporting primary samples from the collection sites to the laboratory. The samples collected had to be in the same condition in which the producers usually sell them. The storage procedure, including choice of containers and modes of transport were specified in consultation with the analysts. Secure storage in inert containers which can be heat-sealed using simple equipment was required during transport. The samples had to be cooled with crushed ice or solid CO_2 and be transported to the laboratory with minimum delay. For some governorates, the distance to the laboratory was short and the transportation using cars or motorcycles was suitable. However, where longer distances were involved, cooled vehicles were required for transport. For logistics and convenience purposes, three sample replicas were stored in the laboratory prior to commencing the analysis. The samples were stored in a frozen state as it is usually the minimum acceptable state with preference given to –40°C or even –70°C, which is current common practice. For samples analysed for fat content, storage at –20°C or –30°C was acceptable. The sample containers were closely sealed with minimum headspace.

Laboratory analysis protocol

The laboratory performing the analysis provided documentation of quality assurance. It followed protocols for adequate handling of samples, ensured use of reliable equipment, and demonstrated efficient analysis processes. Each analysis method was selected considering guidance from the technical committee at the Industrial Research Institute laboratories and following standardized protocols. The primary factor in the choice of methods was the appropriateness of the analysis data they generate, as this data is intended to be sufficient and adequate for users. In this regard, for example, while the measurement value for total lipids may be adequate in relation to food quality control, a nutritionist would require data on the fatty acid profile. Consequently, more biochemically orientated methods were often chosen for the purpose of this food composition database.

The criteria on the choice of methods are outlined below:
- Method reliability as established by collaborative studies involving several laboratories;
- Methods recommended or adopted by international organizations;
- Applicability of method to a wide range of foods and matrices;
- Specificity;
- Sensitivity;
- Accuracy;
- Detectability; and
- Robustness.

It is recognized that the Association of Official Analytical Chemists (AOAC) methods are useful for analysis of nutrients in food matrices (AOAC, 2005). Each of the analytical methods listed for the respective nutrients below were monitored for quality assurance to ensure the generation of quality data (Figure 3).

Figure 3. Analytical methods used based on AOAC

Nutrient	Method of analysis
Moisture	Gravimetric, dry oven at 105° C
Ash	Gravimetric, incineration at 550° C,
Fat	Gravimetric, Organic solvent extraction
Protein	Kjeldahl method
Sugars	Gravimetric, Munson-Walker method
Carbohydrate	Calculation
Calorific value	Calculation
Salt	Titrimetric from Chlorides method
Vitamin C	Titrimetric, Dichloroindophenol method
Total dietary fibre	Enzymatic-Gravimetric method
Iron	Atomic Absorption Spectroscopy technique
Saturated fatty acids, monounsaturated fatty acids, polyunsaturated fatty acids	Esterification by Gas Chromatography
Trans fatty acids	Esterification by Gas Chromatography
Vitamin D	High-Performance Liquid Chromatography
Vitamin A	High-Performance Liquid Chromatography
Vitamin E	High-Performance Liquid Chromatography

PRESENTATION OF DATA —————

Data values

The nutrient data values of the analysed traditional dishes, Arabic sweets, and market foods are of analytical type and are reported to one decimal place with an exception to trans fatty acid values which were reported to two decimal places. When several values existed for the same food and nutrient, a single value was reported as a mean.

In addition, a zero value was reported when analysis revealed that a constituent is not present in the food sample. Although a zero may be used to indicate the amount present is below the nutritionally significant level; however, the designation "trace" was reported instead in this report. "Trace" indicates that the constituent is present but at a level that cannot be measured adequately (defined as <0.01) or that is considered nutritionally insignificant.

The values derived by calculation were often calculated for nutrients in the mixed food dishes and recipes. For instance, total CHO (total "by difference") was obtained by subtracting the percentages of moisture, protein, fat and ash from 100 to give the percentage of CHO by difference. Similarly, the energy value for metabolizable energy in the foods was derived from the energy-yielding constituents, particularly protein, fat and CHO using the energy conversion factors.

Criteria for the unit of expression (Daily Value and Recommended Dietary Intake)

According to the US Food and Drug Administration (FDA) definition, the daily value (DV) is defined as "reference values for reporting nutrients on the nutrition labels". The percentage DV assists the consumer in recognizing how the serving of food and its content in nutrients, fit into their daily diet (FDA, n.d.). The expression "high," "rich in," or "excellent source of" nutrients are used if the food has ≥20% of the DV per reference amount. The terms "good source," "contains," or "provides" are used if the food yields 10-19% of the Recommended Dietary Intake (RDI) per reference amount of the nutrient. Foods that contain <10% of the RDI from the nutrient per reference amount are considered as having low amounts. The variables listed in Table 3 were used to formulate the data tables of the report while considering recommendations on the consumption level of the nutrients and their acceptable DVs (Figure 4).

Figure 4. Nutrients of public health importance and relevant to data analysis

Nutrient	Unit	Recommendation
CHO[a]	grams/100grams	275 grams/day equivalent to 55% in 2000 Kcal-diet
Protein[a]	grams/100grams	50 grams/day equivalent to 10% in 2000 Kcal-diet
Fat[a]	grams/100 grams	78 grams/day (P:M:S ratio 1:1:1) 35% in 2000 Kcal-diet
Saturated fat[a]	grams/100 grams	20 grams/d equivalent to 9% (<10% SFA)
Monounsaturated fat[a]	grams/100 grams	44 grams/day eq to 20%
Polyunsaturated fat[a]	grams/100 grams	22 grams/day (P:S ratio 1:1) eq to 10%
Energy	Kilocalorie	2000 Kcal
Fibre[a]	grams/100 grams	28 grams/day
Ash	grams/100 grams	Not exceeding 5%
Iron[b]	milligrams/kilogram	18 milligram/day
Moisture	grams/100 grams	
Salt[a]	grams/100 grams	5 grams/day
Total sugar[c]	grams/100 grams	147 grams/day
TFA[a]	grams/100 grams	2.2 grams/day equivalent to 1%
Vitamin A[d]	micrograms/100grams	900 micrograms/day
Vitamin E[d]	milligrams/100grams	15 micrograms/day
Vitamin C[d]	milligrams/100grams	90 milligrams/day
Vitamin D[d]	micrograms/100grams	20 microgram/day

[a] *World Health Organization, WHO. (n.d.). Healthy diet. https://www.who.int/news-room/fact-sheets/detail/healthy-diet*

[b] *World Health Organization, WHO. (n.d.) WHO guidance helps detect iron deficiency and protect brain development. https://www.who.int/news/item/20-04-2020-who-guidance-helps-detect-iron-deficiency-and-protect-brain-development*

[c] *Food and Drug Administration, FDA. (n.d.). How to Understand and Use the Nutrition Facts Label. https://www.fda.gov/food/new-nutrition-facts-label/how-understand-and-use-nutrition-facts-label   United States Department of Agriculture, USDA. (2000). Dietary Reference Intakes (DRIs): Recommended Dietary Allowances and Adequate Intakes, Vitamins. https://www.nal.usda.gov/sites/default/files/fnic_uploads/recommended_intakes_individuals.pdf*

[d] *United States Department of Agriculture, USDA. (2000). Dietary Reference Intakes (DRIs): Recommended Dietary Allowances and Adequate Intakes, Vitamins. https://www.nal.usda.gov/sites/default/files/fnic_uploads/recommended_intakes_individuals.pdf*

Calculating serving size and exchange list development

The macronutrient values obtained during the analysis (per 100 grams of a food) were used to determine the number of carbohydrate (CHO), fat and protein exchanges using the rounding-off method described by Wheeler et al. for fitting recipes into exchange lists (Wheeler & Franz & Barrier, 1995). The CHO, fat, and protein exchanges were calculated as follows.

- **CHO:** if a food portion had 1 to 5 grams CHO, it was not counted as a serving. If it had 6 to 10 grams CHO, it was counted as half a serving; however, if it had 11 to 20 grams CHO, it was counted as one serving.
- **Fat:** if a food portion had 0 to 2 grams fat, it was not counted as a serving. If it had 3 to 6 grams fats, it was counted as half a serving; however, if it had 7 grams fats, it was counted as one serving.
- **Protein:** if a food portion had 0 to 3 grams protein from the meat and meat substitutes list, it was not counted as a serving; however, if it had 4 to 10 grams protein, it was counted as one serving.

In addition, the amount of a dish (in grams) providing 1 CHO, 1 protein and 1 fat exchange was calculated using the results from the proximate composition, whereby the grams of CHO, protein, and fat present in the food are divided by the factors 15, 7, and 5, respectively.

RESULTS

Acronyms used in tables of results:

Chem-R: Chemical Results

CHO: Carbohydrate

HFM: High Fat Meat

LM: Lean Meat

M: Monounsaturated fatty acid

M:S: Monounsaturated fatty acid:Saturated fatty acid ratio

MFM: Medium Fat Meat

MUFA: Monounsaturated fatty acid

N.label: Nutrition facts label

NA: Not Available

P: Polyunsaturated fatty acid

P:M: Polyunsaturated fatty acid: Monounsaturated fatty acid ratio

P:M:S: Polyunsaturated fatty acid: Monounsaturated fatty acid ratio: Saturated fatty acid ratio

P:S: Polyunsaturated fatty acid:Saturated fatty acid ratio

PUFA: Polyunsaturated fatty acid

RFM: Reduced Fat Milk

S: Saturated fatty acid

SFA: Saturated fatty acid

TFA: Trans fatty acid

Tot S.: Total Sugar

Tr: Trace

Vit A: Vitamin A

Vit C: Vitamin C

Vit D: Vitamin D

Vit E: Vitamin E

Table 1. Total sugar, salt, iron, total fatty acids, trans fat, fatty acids ratios in traditional dishes collected from Mount Lebanon and the percentages of their daily contribution in a 2000 Kcal-diet.

Dish	Amounts in 100 g of edible portions (per gram)								Percentage Daily Contributions in 2000 Kcal-Diet								Fatty acid Ratios			
	Tot S.	NaCl	Iron	Fat	SFA	MUFA	PUFA	TFA	Tot S.	NaCl	Iron	Fat	SFA	MUFA	PUFA	TFA	P:S	M:S	P:M	P:M:S
Baba ghanouj	2.8	0.7	0.6	4.3	0.7	3	0.5	Tr	1.9	14	3.3	5.5	3.5	6.9	2.3	Tr	0.7	4.2	0.1	0.7:4.2:1
Batata mahchi	2.5	1.1	1.1	1.5	0.4	0.5	0.4	0.02	1.7	22	6.3	1.9	2.4	1.1	2.2	0.8	0.9	1	0.9	0.9:1:1
Borgul bi banadoura	1.5	1.4	1.5	6	0.6	1.9	3.3	Tr	1	28	8.5	7.6	3.2	4.4	15.3	Tr	5.2	3	1.7	5.2:3:1
Chichbarak	2.3	0.7	2.8	2.9	0.8	0.9	1.1	0.01	1.5	14	15.7	3.7	4	2.2	5	0.2	1.3	1.2	1.1	1.3:1.2:1
Falafel	3.6	1.4	1.8	11	1.4	4.3	5.1	Tr	2.4	28	10.2	13.9	7.3	9.8	23.2	Tr	3.4	2.9	1.1	3.4:2.9:1
Fatayer sabanikh	1.6	0.9	5	1.7	0.1	0.5	0.9	Tr	1	18	27.7	2.1	0.8	1.2	4.3	Tr	5.4	3.1	1.7	5.4:3.1:1
Fattat Hommos	3	0.6	0.9	6	2.6	1.8	1.4	0.04	2	12	5.2	7.6	13.3	4.1	6.7	1.9	0.5	0.6	0.8	0.5:0.6:1
Fattoush	1.6	0.3	0.6	2.7	0.3	1.5	0.7	Tr	1	6	3.3	3.4	1.7	3.5	3.5	Tr	2.1	4.4	0.4	2.1:4.4:1
Foul moudamas	1	1	0.6	1.4	0.2	0.9	0.2	Tr	0.6	20	3.3	1.7	1.1	2.2	0.8	Tr	0.8	4.3	0.2	0.8:4.3:1
Hindbe bil zet	4.2	0.7	1.6	6.9	1	4.4	1.5	Tr	2.8	14	9	8.8	5.3	10.1	6.9	Tr	1.4	4.1	0.3	1.4:4.1:1
Hommos bi tahini	1.6	0.8	0.8	2.8	0.3	1	1.4	Tr	1.0	16	4.7	3.5	1.7	2.4	6.3	Tr	4	3	1.3	4:3:1
Kafta wa batata	1.1	1.2	4.1	9.1	2.9	3.9	1.9	0.19	0.7	24	22.9	11.6	14.7	9	8.9	8.6	0.6	1.3	0.5	0.6:1.3:1
Kebba bil sayniya	2.5	1.2	2	4	1	1.6	1.2	0.02	1.7	24	11.3	5.1	5.4	3.7	5.7	1.0	1.1	1.5	0.7	1.1:1.5:1
Koussa mahchi	0.4	1.2	1.3	3.8	1	1.4	1.3	0.03	0.2	24	7.3	4.8	5.2	3.2	6	1.2	1.2	1.3	0.9	1.2:1.3:1
Lahm bil ajin	1.5	0.5	1.9	2	0.7	0.9	0.3	0.01	1	10	11	2.5	3.5	2.1	1.5	0.2	0.4	1.3	0.3	0.4:1.3:1
Loubia bil zet	1.8	0.6	0.8	7.3	1	3.4	2.8	0.01	1.2	12	4.8	9.3	5	7.7	13	0.3	2.8	3.4	0.8	2.8:3.4:1
Malfouf mahchi	2.1	1.8	1	1.6	0.5	0.5	0.4	0.02	1.4	36	6	2	2.8	1.2	2.2	0.7	0.8	0.9	0.9	0.8:0.9:1
Moujadara	1.5	0.4	1.2	6	0.5	2	3.3	Tr	1	8	6.9	7.6	2.9	4.6	15.3	Tr	5.6	3.4	1.6	5.6:3.4:1
Moghrabia	1.2	0.4	0.9	2.1	0.9	0.7	0.4	0.01	0.8	8	5.2	2.6	4.6	1.6	1.9	0.4	0.4	0.7	0.5	0.4:0.7:1
Mousaka batinjan	2	0.6	1	4.9	0.5	1.7	2.6	Tr	1.3	12	5.7	6.2	2.5	3.9	12.1	Tr	5.3	3.4	1.5	5.3:3.4:1
Riz a dajaj	1.2	0.7	1	5.9	0.9	2.7	2.1	0.03	0.8	14	5.9	7.5	4.8	6.2	9.8	1.3	2.2	2.8	0.7	2.2:2.8:1
Riz bi lahma	1	0.4	1.3	7.4	1.1	3.7	2.5	0.03	0.6	8	7.3	9.4	5.8	8.4	11.3	1.3	2.1	3.1	0.6	2.1:3.1:1
Sayadia	0.4	0.8	1.3	2.9	0.3	1.2	1.3	Tr	0.2	16	7.3	3.7	1.8	2.8	5.8	Tr	3.6	3.4	1	3.6:3.4:1
Shawarma dajaj	2.2	1.4	1.6	3.6	0.5	1.2	1.8	Tr	1.5	28	9.2	4.6	2.5	2.9	8.2	Tr	3.5	2.5	1.4	3.5:2.5:1
Shawarma lahma	0.9	0.7	1.5	8.8	5.6	2.6	0.3	0.18	0.6	14	8.3	11.2	28.1	6	1.5	8.4	0	0.4	0.1	0:0.4:1
Tabboula	0.6	1.1	1	0.6	0	0.4	0	Tr	0.4	22	6	0.7	0.4	1	0.2	Tr	0.6	4.7	0.1	0.6:4.7:1
Warak enab	1.1	1.3	1.3	5.1	2.5	1.7	0.7	0.08	0.7	26	7.3	6.5	12.7	4	3.2	3.7	0.2	0.6	0.4	0.2:0.6:1
Yakhnat Bamia	1.4	1.1	1.5	2.9	0.3	1	1.5	Tr	0.9	22	8.6	3.7	1.7	2.2	7	Tr	4.3	2.8	1.5	4.3:2.8:1
Yakhnat Fassoulia	1	1	0.9	1.9	0.2	0.6	1	Tr	0.6	20	5.2	2.4	1.2	1.4	4.5	0.1	4.2	2.7	1.5	4.2:2.7:1
Yakhnat Mouloukhia	0.9	0.9	1	1.5	0.1	0.5	0.8	Tr	0.6	18	5.8	1.9	0.8	1.1	3.8	Tr	5.1	3	1.6	5.1:3:1

Table 2. Total sugar, salt, iron, total fatty acids, trans fat, fatty acids ratios in traditional dishes collected from Beqaa and the percentages of their daily contribution in a 2000 Kcal-diet.

Dish	Amounts in 100 g of edible portions (per gram)								Percentage Daily Contributions in 2000 Kcal-Diet								Fatty acid Ratios			
	Tot S.	NaCl	Iron	Fat	SFA	MUFA	PUFA	TFA	Tot S.	NaCl	Iron	Fat	SFA	MUFA	PUFA	TFA	P:S	M:S	P:M	P:M:S
Baba ghanouj	1.8	1.2	0.7	8.3	4.4	3.2	0.4	0.07	1.2	24	4.1	10.6	22.3	7.4	2.1	3	0.1	0.7	0.1	0.1:0.7:1
Batata mahchi	0.4	0.8	1.1	1.7	1	0.5	0	0.05	0.2	16	6.2	2.1	5.3	1.1	0.2	2.3	0	0.4	0.1	0:0.4:1
Borgul bi banadoura	1.6	0.8	1.6	4.9	3.1	1.3	0.4	0.03	1	16	9.1	6.2	15.5	3	1.8	1.5	0.1	0.4	0.3	0.1:0.4:1
Chichbarak	2.7	1.1	2.7	5.8	4	1.4	0.1	0.13	1.8	22	15.2	7.4	20.4	3.2	0.6	6	0	0.3	0.1	0:0.3:1
Falafel	3.2	1.9	1.7	13.1	5.3	6.5	1.1	0.08	2.1	38	9.7	16.7	26.8	14.7	5.2	3.5	0.2	1.2	0.1	0.2:1.2:1
Fatayer sabanikh	2.4	1.5	5.1	17.8	2	5.7	10	Tr	1.6	30	28.5	22.8	10	13	45.6	Tr	4.9	2.8	1.7	4.9:2.8:1
Fattat Hommos	2.2	0.6	1.7	13.1	5.8	6.4	0.8	0.05	1.5	12	9.9	16.7	29.1	14.5	3.6	2.3	0.1	1.1	0.1	0.1:1.1:1
Fattoush	1.3	1.3	0.8	2.6	1.5	0.8	0.1	0.03	0.8	26	4.8	3.3	7.9	1.9	0.4	1.5	0	0.5	0.1	0:0.5:1
Foul moudamas	1	2.4	0.9	2.8	1.7	1	Tr	0.04	0.6	48	5.2	3.5	8.5	2.3	0.1	1.6	0	0.6	0	0:0.6:1
Hindbe bil zet	1.3	0.9	2	3.5	1.5	0.9	0.9	0.01	0.8	18	11.1	4.4	7.5	2.2	4.4	0.4	0.6	0.6	0.9	0.6:0.6:1
Hommos bi tahini	2.7	0.6	1.2	5.1	3.1	1.8	0.1	0.04	1.8	12	6.6	6.5	15.5	4	0.7	1.8	0	0.5	0	0:0.5:1
Kafta wa batata	0.9	0.9	1.3	3.4	2.4	0.8	0.1	0.05	0.6	18	7.2	4.3	12.1	1.8	0.5	2.4	0	0.3	0.1	0:0.3:1
Kebba bil sayniya	2	1	2	3	2.1	0.7	Tr	0.04	1.3	20	11.6	3.8	10.7	1.7	0.1	1.9	0	0.3	0	0:0.3:1
Koussa mahchi	0.8	0.9	1.1	2.5	1.8	0.5	Tr	0.03	0.5	18	6.5	3.2	9.3	1.1	0.3	1.3	0	0.2	0.1	0:0.2:1
Lahm bil ajin	4.7	0.7	3.1	14.1	2.1	3.1	8.8	Tr	3.2	14	17.5	18	10.6	7.1	40	Tr	4.1	1.4	2.7	4.1:1.4:1
Loubia bil zet	0.6	0.8	1.1	1	0.5	0.3	Tr	0.01	0.4	16	6.5	1.2	2.5	0.8	0.4	0.5	0.1	0.7	0.2	0.1:0.7:1
Malfouf mahchi	1.6	0.7	1	1.3	0.6	0.5	Tr	0.03	1	14	6	1.6	3.4	1.1	0.3	1.3	0.1	0.7	0.1	0.1:0.7:1
Moujadara	1	0.9	1.1	4	2.1	1.4	0.3	0.04	0.6	18	6.3	5.1	10.9	3.3	1.4	1.6	0.1	0.6	0.2	0.1:0.6:1
Moghrabia	1.5	1	1.2	5.7	2.9	2.1	0.5	0.05	1	20	6.7	7.3	14.9	4.9	2.2	2.3	0.1	0.7	0.2	0.1:0.7:1
Mousaka batinjan	1.5	1.9	2.4	3.9	2.4	1.1	0.1	0.05	1	38	13.5	5	12.4	2.6	0.8	2.1	0	0.4	0.1	0:0.4:1
Riz a dajaj	0.7	0.7	3.8	5.1	2.9	1.7	0.3	0.05	0.4	14	21.3	6.5	14.7	3.9	1.6	2.3	0.1	0.5	0.2	0.1:0.5:1
Riz bi lahma	0.6	0.9	1.7	5.6	3.1	2.1	0.3	0.03	0.4	18	9.9	7.1	15.5	4.8	1.5	1.5	0.1	0.6	0.1	0.1:0.6:1
Sayadia	0.8	1.5	1.4	7.4	5	1.9	0.4	0.04	0.5	30	7.8	9.4	25.2	4.3	1.9	1.6	0	0.3	0.2	0:0.3:1
Shawarma dajaj	2	1.2	1.5	10.4	5	4	1.2	0.05	1.3	24	8.8	13.3	25.1	9.1	5.8	2.3	0.2	0.8	0.3	0.2:0.8:1
Shawarma lahma	0.9	1.4	1.4	9.8	4.2	4.6	0.7	0.07	0.6	28	7.9	12.5	21.3	10.6	3.6	3.1	0.1	1.1	0.1	0.1:1.1:1
Tabboula	1.3	1.9	1.2	3.6	2.1	1.3	0.1	0.04	0.8	38	6.7	4.6	10.5	2.9	0.6	1.9	0	0.6	0.1	0:0.6:1
Warak enab	1	0.9	1.7	3.3	2.7	0.4	0.1	0.03	0.6	18	9.7	4.2	13.7	0.9	0.5	1.5	0	0.1	0.2	0:0.1:1
Yakhnat Bamia	5.5	0.8	1	5.4	2.8	2	0.4	0.09	3.7	16	5.9	6.9	14.1	4.6	2	3.9	0.1	0.7	0.2	0.1:0.7:1
Yakhnat Fassoulia	0.9	0.7	1.1	3.1	2	0.7	0.2	0.02	0.6	14	6.1	3.9	10.4	1.7	0.9	0.9	0.1	0.3	0.2	0.1:0.3:1
Yakhnat Mouloukhia	0.8	0.9	1.1	3.1	2	0.8	0	0.06	0.5	18	6.5	3.9	10.3	2	0.4	2.5	0	0.4	0.1	0:0.4:1

Table 3. Total sugar, salt, iron, total fatty acids, trans fat, fatty acids ratios in traditional dishes collected from Beirut and the percentages of their daily contribution in a 2000 Kcal-diet.

Dish	Amounts in 100 g of edible portions (per gram)								Percentage Daily Contributions in 2000 Kcal-Diet								Ratios			
	Tot S.	NaCl	Iron	Fat	SFA	MUFA	PUFA	TFA	Tot S.	NaCl	Iron	Fat	SFA	MUFA	PUFA	TFA	P:S	M:S	P:M	P:M:S
Baba ghanouj	2.1	0.9	0.9	10.8	4.1	5.8	0.7	0.01	1.4	18	5.3	13.8	20.6	13.3	3.4	0.4	0.1	1.4	0.1	0.1:1.4:1
Batata mahchi	1.5	0.7	0.7	1.3	0.2	0.4	0.6	0.01	1	14	3.9	1.6	1	0.9	2.9	0.3	3	1.9	1.5	3:1.8:1
Borgul bi banadoura	1.3	1.3	1	3.6	3.1	0.3	Tr	0.01	0.8	26	5.5	4.6	15.8	0.8	0.2	0.6	0	0.1	0.1	0:0.1:1
Chichbarak	2.5	0.7	0.7	3.5	3	0.4	Tr	Tr	1.7	14	4.3	4.4	15	1	0	0	0	0.1	0	0.0:0.1:1
Falafel	2	1.3	3.2	11.4	5.4	5.6	0.3	Tr	1.3	26	17.9	14.6	27.2	12.7	1.5	0	0	1	0	0:1:1
Fatayer sabanikh	1.4	0.7	4.7	13.7	6.6	6	0.9	0.04	0.9	14	26.2	17.5	33.4	13.6	4.3	1.8	0.1	0.9	0.1	0.1:0.9:1
Fattat Hommos	3.2	0.6	1.2	7.7	3	4.5	0.1	Tr	2.1	12	6.6	9.8	15.1	10.3	0.4	0	0	1.5	0	0:1.5:1
Fattoush	1.8	0.4	2.2	3.1	2	1	Tr	0.01	1.2	8	12.5	3.9	10.2	2.3	0.1	0.2	0	0.5	0	0:0.5:1
Foul moudamas	3.3	0.7	0.7	1.6	0.2	1.1	0.1	0.00	2.2	14	4.1	2	1.3	2.6	0.8	0.07	0.6	4.2	0.1	0.6:4.2:1
Hindbe bil zet	2.3	0.8	2.6	6.4	0.9	4.6	0.7	Tr	1.5	16	14.6	8.2	4.7	10.6	3.5	0	0.8	4.9	0.1	0.8:4.9:1
Hommos bi tahini	2.4	0.8	1.2	3.1	0.5	1.5	1	Tr	1.6	16	6.6	3.9	2.5	3.5	4.6	0	2	3.1	0.6	2:3.1:1
Kafta wa batata	2	0.8	1.4	2.8	2.3	0.4	Tr	Tr	1.3	16	7.9	3.5	11.6	0.9	0.1	0	0	0.1	0.1	0:0.1:1
Kebba bil sayniya	3.3	0.8	1.3	4.4	0.7	2.1	1.5	0.01	2.2	16	7.5	5.6	3.7	4.8	6.8	0.6	2	2.8	0.7	2:2.8:1
Koussa mahchi	1.1	0.7	1.7	1.6	1.3	0.2	Tr	0.00	0.7	14	9.8	2	6.5	0.6	0	0.2	0	0.2	0	0:0.2:1
Lahm bil ajin	3.4	0.7	1.7	3.1	0.4	0.6	1.9	Tr	2.3	14	9.7	3.9	2.3	1.5	8.8	0	4.1	1.4	2.8	4.1:1.4:1
Loubia bil zet	1.8	0.9	0.9	7.5	1.9	4.6	0.8	0.02	1.2	18	5.1	9.6	9.8	10.5	3.9	0.6	0.4	2.3	0.1	0.4:2.3:1
Malfouf mahchi	2.1	0.9	1.1	3.1	1	1	0.9	0.02	1.4	18	6.2	3.9	5.3	2.4	4.3	0.8	0.8	0.9	0.9	0.8:0.9:1
Moujadara	2	0.5	1.4	6.2	1.6	3.6	0.9	0.02	1.3	10	7.8	7.9	8.2	8.1	4.2	1.1	0.5	2.1	0.2	0.5:2.1:1
Moghrabia	1.2	0.2	1	3	1.3	1	0.6	0.00	0.8	4	5.9	3.8	6.7	2.3	2.7	0.1	0.4	0.7	0.5	0.4:0.7:1
Mousaka batinjan	0.5	1.3	0.9	9.8	6.8	2.4	0.4	0.03	0.3	26	5.1	12.5	34.3	5.5	2.1	1.3	0	0.3	0.1	0:0.3:1
Riz a dajaj	0.4	1	1	6.8	3.7	1.9	0.3	0.76	0.2	20	6	8.7	18.9	4.4	1.3	34.6	0	0.5	0.1	0:0.5:1
Riz bi lahma	1.2	0.9	1	7.4	4.3	2.9	Tr	0.01	0.8	18	5.9	9.4	21.5	6.7	0.3	0.6	0	0.6	0	0:0.6:1
Sayadia	0.2	0.8	0.7	5.6	3.2	1.8	0.4	0.01	0.1	16	3.9	7.18	16.2	4.2	2	0.2	0.1	0.5	0.2	0.1:0.5:1
Shawarma dajaj	1.8	0.8	1.5	8.7	4.2	3.4	0.9	0.03	1.2	16	8.7	11.1	21.4	7.9	4	1.5	0.2	0.8	0.2	0.2:0.8:1
Shawarma lahma	1.1	0.4	1.3	5.6	4.1	0.9	0.2	0.25	0.7	8	7.6	7.1	20.7	2.1	1.2	11.4	0	0.2	0.2	0:0.2:1
Tabboula	1.4	0.6	2.3	5.1	3.4	1.5	Tr	0.02	0.9	12	13.2	6.5	17.4	3.5	0.2	0.7	0	0.4	0	0:0.4:1
Warak enab	2.5	0.7	1	4.8	3.2	1	0.4	0.04	1.7	14	5.9	6.1	16	2.4	2	1.7	0.1	0.3	0.4	0.1:0.3:1
Yakhnat Bamia	1.7	0.9	1.3	5.7	4.3	0.7	0.4	0.11	1.1	18	7.7	7.3	21.8	1.7	2	4.9	0.1	0.1	0.5	0.1:0.1:1
Yakhnat Fassoulia	1	0.6	1.8	1.6	1.1	0.4	Tr	0.01	0.6	12	10.2	2	5.8	0.9	0.1	0.4	0	0.3	0	0:0.3:1
Yakhnat Mouloukhia	0.2	0.7	1	6.2	3.7	2	0.4	0.01	0.1	14	5.7	7.9	18.4	4.6	2	0.2	0.1	0.5	0.2	0.1:0.5:1

Table 4. Total sugar, salt, iron, total fatty acids, trans fat, fatty acids ratios in traditional dishes collected from Tripoli and the percentages of their daily contribution in a 2000 Kcal-diet.

Dish	Amounts in 100 g of edible portions (per gram)								Percentage Daily Contributions in 2000 Kcal-Diet								Fatty acid Ratios			
	Tot S.	NaCl	Iron	Fat	SFA	MUFA	PUFA	TFA	Tot S.	NaCl	Iron	Fat	SFA	MUFA	PUFA	TFA	P:S	M:S	P:M	P:M:S
Baba ghanouj	3	0.6	0.6	13	9.1	2.8	0.5	0.35	2	12.6	3.5	16.6	45.9	6.5	2.6	15.9	0	0.3	0.2	0:0.3:1
Batata mahchi	1.5	1.1	1.1	0.3	0.2	0	Tr	0.01	1	23.8	6.6	0.3	1	0.1	0	0.4	0	0.3	0.1	0:0.3:1
Borgul bi banadoura	1.4	1.2	1.2	5.9	3.4	2.1	0.2	0.04	0.9	25	6.9	7.5	17.3	4.8	1.2	1.6	0	0.6	0.1	0:0.6:1
Chichbarak	6	1.1	1.1	6.7	5.3	1.2	0.1	0.07	4	22.8	6.3	8.5	26.5	2.7	0.4	3.3	0	0.2	0	0:0.2:1
Falafel	3	1.7	1.7	8.3	5.3	2.2	0.6	0.07	2.0	35	9.7	10.6	26.6	5.1	2.9	3	0.1	0.4	0.2	0.1:0.4:1
Fatayer sabanikh	2.3	4.8	4.8	17.5	1.8	5.7	9.8	Tr	1.5	97.6	27.1	22.4	9.1	13.1	44.9	0	5.4	3.1	1.7	5.4:3.1:1
Fattat Hommos	3.4	1.3	1.3	5.5	4.8	0.5	0.1	0.05	2.3	26.4	7.3	7	24.1	1.1	0.5	2.2	0	0.1	0.2	0:0.1:1
Fattoush	5.2	0.9	0.9	2.8	2.2	0.3	0.1	0.04	3.5	19	5.2	3.5	11.2	0.8	0.5	1.7	0	0.1	0.3	0:0.1:1
Foul moudamas	1.1	0.6	0.6	10	4.8	4.7	0.3	0.05	0.7	13.6	3.7	12.8	24	10.8	1.7	2.2	0	0.9	0	0:0.9:1
Hindbe bil zet	4.6	1.7	1.7	15.8	6.4	8.4	0.8	0.06	3.1	34.4	9.5	20.2	32	19.1	4	2.8	0.1	1.3	0.1	0.1:1.3:1
Hommos bi tahini	3	1	1	10.5	6.6	3.2	0.5	0.07	2	20	5.5	13.4	33.2	7.3	2.5	3.3	0	0.4	0.1	0:0.4:1
Kafta wa batata	1.9	1.2	1.2	7.5	5.6	1.5	0.1	0.11	1.2	25	6.9	9.6	28.3	3.4	0.8	5.1	0	0.2	0.1	0:0.2:1
Kebba bil sayniya	2.5	1.8	1.8	11.2	10.2	0.7	Tr	0.12	1.7	37.4	10.3	14.3	51.3	1.7	0.3	5.6	0	0	0	0:0:1
Koussa mahchi	1.9	1.7	1.7	0.6	0.4	0.1	Tr	0.01	1.2	35.2	9.7	0.7	2.1	0.3	0	0.6	0	0.3	0	0:0.3:1
Lahm bil ajin	4.1	1.3	1.3	19.6	6.9	9.2	3.3	0.06	2.7	26.4	7.3	25.1	34.5	21.1	15.1	2.6	0.4	1.3	0.3	0.4:1.3:1
Loubia bil zet	0.9	2	2	8.4	1.1	3.9	3.3	0.01	0.6	41	11.3	10.7	5.7	8.9	15.0	0.3	2.8	3.4	0.8	2.8:3.4:1
Malfouf mahchi	2.6	2.7	2.7	3.9	2.8	0.9	0.1	0.01	1.7	54.4	15.1	5	14.1	2.1	0.5	0.5	0	0.3	0.1	0:0.3:1
Moujadara	1.1	1.6	1.6	6.4	0.6	2.1	3.2	Tr	0.7	33.2	9.2	8.2	3.1	4.9	14.6	0	5	3.4	1.4	5:3.4:1
Moghrabia	1.7	0.9	0.9	13	3.6	1.4	0.3	0.14	1.1	18.2	5	7	18.2	3.1	1.4	6.5	0	0.3	0.2	0:0.3:1
Mousaka batinjan	1.9	1.1	1.1	0.3	5.7	2.3	0.5	0.05	1.2	22.8	6.3	11.1	28.5	5.3	2.6	2.3	0.1	0.4	0.2	0.1:0.4:1
Riz a dajaj	0.2	1.2	1.2	5.9	0.5	1.6	1.2	0.02	0.1	25	6.9	4.4	2.8	3.7	5.8	0.8	2.2	2.8	0.7	2.2:2.8:1
Riz bi lahma	2	1	1	6.7	6.5	0.7	0.1	0.14	1.3	21.8	6	9.7	32.7	1.6	0.7	6.5	0	0.1	0.2	0:0.1:1
Sayadia	0.6	1.2	1.2	8.3	1.3	4.5	4.7	Tr	0.4	25	6.9	13.5	6.5	10.3	21.5	0	3.6	3.4	1	3.6:3.4:1
Shawarma dajaj	1.9	1.3	1.3	17.5	3.5	1.5	0.2	Tr	1.2	27.2	7.5	6.7	17.7	3.4	0.9	0	0	0.4	0.1	0:0.4:1
Shawarma lahma	1.1	1.7	1.7	5.5	4.6	2.2	0.2	0.15	0.7	35	9.7	9.3	23.2	5	1.1	6.9	0	0.4	0.1	0:0.4:1
Tabboula	1.3	1.5	1.5	2.8	0	0.2	Tr	0.00	0.8	30	8.3	0.3	0.2	0.5	0.1	0	0.6	4.7	0.1	0.6:4.7:1
Warak enab	0.8	1	1	10	2.1	1.4	0.5	0.07	0.5	20	5.5	5.3	10.4	3.3	2.6	3	0.2	0.6	0.4	0.2:0.6:1
Yakhnat Bamia	2.2	1.5	1.5	15.8	9.1	1	0.1	0.18	1.5	30	8.3	13.4	45.7	2.3	0.6	8.1	0	0.1	0.1	0:0.1:1
Yakhnat Fassoulia	1.1	1.6	1.6	10.5	7.7	1.6	0.1	0.16	0.7	33.4	9.2	12.3	38.5	3.6	0.5	7.4	0	0.2	0.1	0:0.2:1
Yakhnat Mouloukhia	0.9	1.6	1.6	7.5	3.7	1.6	0.1	0.14	0.6	33.4	9.2	7.3	18.7	3.6	0.8	6.4	0	0.4	0.1	0:0.4:1

Table 5. Total sugar, salt, iron, total fatty acids, trans fat, fatty acids ratios in traditional dishes collected from Saida and the percentages of their daily contribution in a 2000 Kcal-diet.

Dish	Amounts in 100 g of edible portions (per gram)								Percentage Daily Contributions in 2000 Kcal-Diet								Ratios			
	Tot S.	NaCl	Iron	Fat	SFA	MUFA	PUFA	TFA	Tot S.	NaCl	Iron	Fat	SFA	MUFA	PUFA	TFA	P:S	M:S	P:M	P:M:S
Baba ghanouj	1.5	0.9	0.7	10.8	3.3	5.9	1.4	Tr	1	18	4.1	13.8	16.9	13.5	6.6	0	0.4	1.7	0.2	0.4:1.7:1
Batata mahchi	0.8	1.3	1.2	1.4	0.8	0.4	Tr	0.03	0.5	26	7	1.7	4.4	0.9	0.3	1.2	0	0.4	0.1	0:0.4:1
Borgul bi banadoura	1.8	1.1	1.3	4.7	1.9	2.3	0.3	0.03	1.2	22	7.3	6	9.8	5.2	1.6	1.5	0.1	1.1	0.1	0.1:1.1:1
Chichbarak	2.6	1	2.5	4.2	2.7	1.1	0.3	0.05	1.7	20	14.3	5.3	13.7	2.5	1.3	2.4	0.1	0.4	0.2	0.1:0.4:1
Falafel	4.3	1.4	1.9	14.8	4.8	8.3	1.6	0.06	2.9	28	10.7	18.9	24	18.8	7.4	2.6	0.3	1.7	0.2	0.3:1.7:1
Fatayer sabanikh	2.2	0.9	4.5	5.1	2	2.2	0.7	0.03	1.5	18	25.3	6.5	10.2	5.1	3.3	1.1	0.3	1.1	0.3	0.3:1.1:1
Fattat Hommos	0.6	0.1	1	2.9	1.6	0.9	0.2	0.04	0.4	2	5.8	3.7	8.3	2	1.3	1.7	0.1	0.5	0.3	0.1:0.5:1
Fattoush	2	0.7	0.4	3.5	2.4	0.9	Tr	0.04	1.3	14	2.6	4.4	12.4	2.1	0.1	1.7	0	0.3	0	0:0.3:1
Foul moudamas	2.3	1.4	0.7	1.6	0.7	0.7	0.1	0.01	1.5	28	3.9	2	3.7	1.6	0.5	0.2	0.1	0.9	0.1	0.1:0.9:1
Hindbe bil zet	0.7	0.9	1.7	20.9	5.3	13	2.4	0.04	0.4	18	9.9	26.7	26.7	29.6	11.1	1.9	0.4	2.4	0.1	0.4:2.4:1
Hommos bi tahini	1.8	0.9	0.9	10.7	3.5	5.9	1.1	0.04	1.2	18	5.2	13.7	17.9	13.5	5	1.9	0.3	1.6	0.1	0.3:1.6:1
Kafta wa batata	1.3	1.2	3.9	8.8	5.3	2.9	0.3	0.10	0.8	24	22	11.2	26.8	6.7	1.7	4.4	0	0.5	0.1	0:0.5:1
Kebba bil sayniya	1.3	1.1	1.9	9.4	4.4	4.4	0.4	0.08	0.8	22	10.8	12	22	10.1	2	3.8	0.1	1	0.1	0.1:1:1
Koussa mahchi	0.8	1.2	1.2	3.6	2.7	0.5	0.2	0.05	0.5	24	6.7	4.6	13.8	1.2	0.9	2.4	0	0.2	0.3	0:0.2:1
Lahm bil ajin	3.2	0.7	2	6	4	1.5	0.3	0.07	2.1	14	11.2	7.6	20.1	3.5	1.5	3	0	0.3	0.2	0:0.3:1
Loubia bil zet	0.9	0.6	0.7	4.2	2.7	1.1	0.2	0.04	0.6	12	4.3	5.3	13.8	2.6	1	1.7	0	0.4	0.1	0:0.4:1
Malfouf mahchi	1.6	1.7	1.1	0.7	0.4	0.1	Tr	0.01	1	34	6.3	0.9	2.4	0.3	0.1	0.4	0	0.3	0.2	0:0.3:1
Moujadara	1.6	0.6	1.3	6.4	2.4	3.5	0.4	0.03	1	12	7.6	8.2	12.1	7.9	2	1.4	0.1	1.4	0.1	0.1:1.4:1
Moghrabia	1.8	0.6	0.8	3.4	2.1	0.9	0.2	0.01	1.2	12	4.9	4.3	10.8	2.2	1.1	0.3	0.1	0.4	0.2	0.1:0.4:1
Mousaka batinjan	1.9	0.7	0.9	5.6	1.6	3.4	0.5	0.02	1.2	14	5.4	7.1	8	7.7	2.4	1	0.3	2.1	0.1	0.3:2.1:1
Riz a dajaj	1.3	0.4	0.9	5.8	2.7	2.3	0.6	0.05	0.8	8	5.4	7.4	13.7	5.4	2.7	2.3	0.2	0.8	0.2	0.2:0.8:1
Riz bi lahma	0.9	1	1.2	4.6	2.2	1.9	0.4	0.05	0.6	20	7.1	5.9	11.2	4.3	1.8	2	0.1	0.8	0.2	0.1:0.8:1
Sayadia	0.7	1.4	1.1	5.9	2.3	2.8	0.7	0.03	0.4	28	6.6	7.5	11.5	6.4	3.3	1.3	0.3	1.2	0.2	0.3:1.2:1
Shawarma dajaj	0.1	0.8	1.5	6.7	3	2.9	0.6	0.02	0	16	8.8	8.5	15.4	6.7	2.8	0.9	0.2	0.9	0.2	0.2:0.9:1
Shawarma lahma	1	0.9	1.3	9.9	6.1	3.1	0.4	0.18	0.6	18	7.6	12.6	30.5	7.2	1.9	8.1	0	0.5	0.1	0:0.5:1
Tabboula	0.8	0.7	0.9	11.6	2.9	7.9	0.6	Tr	0.5	14	5.4	14.8	14.8	18.1	2.9	0	0.2	2.6	0	0.2:2.6:1
Warak enab	0.3	1.3	1.4	2.5	1.7	0.5	0.1	0.03	0.2	26	7.8	3.2	8.8	1.2	0.7	1.3	0	0.3	0.3	0:0.3:1
Yakhnat Bamia	1.6	0.7	1.4	2.6	1.7	0.5	0.2	0.03	1	14	8.2	3.3	8.9	1.2	1	1.1	0.1	0.3	0.4	0.1:0.3:1
Yakhnat Fassoulia	0.9	0.9	0.8	3.3	2.1	0.8	0.2	0.02	0.6	18	4.9	4.2	10.7	1.9	1.2	0.9	0.1	0.4	0.3	0.1:0.4:1
Yakhnat Mouloukhia	0.8	0.9	1.1	4.9	2.8	1.4	0.5	0.03	0.5	18	6.5	6.2	14.1	3.3	2.5	1.3	0.2	0.5	0.3	0.2:0.5:1

Table 6. Total sugar, salt, and iron content in 100 grams of traditional dishes collected from the five governorates.

	Amounts in 100 g of edible portions (per gram)														
Dish	**Mount Lebanon**			**Beqaa**			**Beirut**			**Tripoli**			**Saida**		
	Tot S.	NaCl	Iron	Tot S.	NaCl	Iron	Tot S.	NaCl	Iron.	Tot S.	NaCl	Iron	Tot S.	NaCl	Iron
Baba ghanouj	2.8	0.7	0.6	1.8	1.2	0.7	2.1	0.9	0.9	3	0.6	0.6	1.5	0.9	0.7
Batata mahchi	2.5	1.1	1.1	0.4	0.8	1.1	1.5	0.7	0.7	1.5	1.1	1.1	0.8	1.3	1.2
Borgul bi banadoura	1.5	1.4	1.5	1.6	0.8	1.6	1.3	1.3	1	1.4	1.2	1.2	1.8	1.1	1.3
Chichbarak	2.3	0.7	2.8	2.7	1.1	2.7	2.5	0.7	0.7	6	1.1	1.1	2.6	1	2.5
Falafel	3.6	1.4	1.8	3.2	1.9	1.7	2	1.3	3.2	3	1.7	1.7	4.3	1.4	1.9
Fatayer sabanikh	1.6	0.9	5	2.4	1.5	5.1	1.4	0.7	4.7	2.3	4.8	4.8	2.2	0.9	4.5
Fattat Hommos	3	0.6	0.9	2.2	0.6	1.7	3.2	0.6	1.2	3.4	1.3	1.3	0.6	0.1	1
Fattoush	1.6	0.3	0.6	1.3	1.3	0.8	1.8	0.4	2.2	5.2	0.9	0.9	2	0.7	0.4
Foul moudamas	1	1	0.6	1	2.4	0.9	3.3	0.7	0.7	1.1	0.6	0.6	2.3	1.4	0.7
Hindbe bil zet	4.2	0.7	1.6	1.3	0.9	2	2.3	0.8	2.6	4.6	1.7	1.7	0.7	0.9	1.7
Hommos bi tahini	1.6	0.8	0.8	2.7	0.6	1.2	2.4	0.8	1.2	3	1	1	1.8	0.9	0.9
Kafta wa batata	1.1	1.2	4.1	0.9	0.9	1.3	2	0.8	1.4	1.9	1.2	1.2	1.3	1.2	3.9
Kebba bil sayniya	2.5	1.2	2	2	1	2	3.3	0.8	1.3	2.5	1.8	1.8	1.3	1.1	1.9
Koussa mahchi	0.4	1.2	1.3	0.8	0.9	1.1	1.1	0.7	1.7	1.9	1.7	1.7	0.8	1.2	1.2
Lahm bil ajin	1.5	0.5	1.9	4.7	0.7	3.1	3.4	0.7	1.7	4.1	1.3	1.3	3.2	0.7	2
Loubia bil zet	1.8	0.6	0.8	0.6	0.8	1.1	1.8	0.9	0.9	0.9	2	2	0.9	0.6	0.7
Malfouf mahchi	2.1	1.8	1	1.6	0.7	1	2.1	0.9	1.1	2.6	2.7	2.7	1.6	1.7	1.1
Moujadara	1.5	0.4	1.2	1	0.9	1.1	2	0.5	1.4	1.1	1.6	1.6	1.6	0.6	1.3
Moghrabia	1.2	0.4	0.9	1.5	1	1.2	1.2	0.2	1	1.7	0.9	0.9	1.8	0.6	0.8
Mousaka batinjan	2	0.6	1	1.5	1.9	2.4	0.5	1.3	0.9	1.9	1.1	1.1	1.9	0.7	0.9
Riz a dajaj	1.2	0.7	1	0.7	0.7	3.8	0.4	1	1	0.2	1.2	1.2	1.3	0.4	0.9
Riz bi lahma	1	0.4	1.3	0.6	0.9	1.7	1.2	0.9	1	2	1	1	0.9	1	1.2
Sayadia	0.4	0.8	1.3	0.8	1.5	1.4	0.2	0.8	0.7	0.6	1.2	1.2	0.7	1.4	1.1
Shawarma dajaj	2.2	1.4	1.6	2	1.2	1.5	1.8	0.8	1.5	1.9	1.3	1.3	0.1	0.8	1.5
Shawarma lahma	0.9	0.7	1.5	0.9	1.4	1.4	1.1	0.4	1.3	1.1	1.7	1.7	1	0.9	1.3
Tabboula	0.6	1.1	1	1.3	1.9	1.2	1.4	0.6	2.3	1.3	1.5	1.5	0.8	0.7	0.9
Warak enab	1.1	1.3	1.3	1	0.9	1.7	2.5	0.7	1	0.8	1	1	0.3	1.3	1.4
Yakhnat Bamia	1.4	1.1	1.5	5.5	0.8	1	1.7	0.9	1.3	2.2	1.5	1.5	1.6	0.7	1.4
Yakhnat Fassoulia	1	1	0.9	0.9	0.7	1.1	1	0.6	1.8	1.1	1.6	1.6	0.9	0.9	0.8
Yakhnat Mouloukhia	0.9	0.9	1	0.8	0.9	1.6	0.2	0.7	1	0.9	1.6	1.6	0.8	0.9	1.1

Table 7 : Daily contribution of 100 grams of a traditional dish as percentage of total sugar, salt, and iron in a 2000 Kcal-diet.

Percentage of Daily Contributions of Nutrients tested in 2000 Kcal-diet															
Dish	Mount Lebanon			Beqaa			Beirut			Tripoli			Saida		
	Tot S.	NaCl	Iron	Tot S.	NaCl	Iron	Tot S.	NaCl	Iron.	Tot S.	NaCl	Iron	Tot S.	NaCl	Iron
Baba ghanouj	1.9	14	3.3	1.2	24	4.1	1.4	18	5.3	2	12.6	3.5	1	18	4.1
Batata mahchi	1.7	22	6.3	0.2	16	6.2	1	14	3.9	1	23.8	6.6	0.5	26	7
Borgul bi banadoura	1	28	8.5	1	16	9.1	0.8	26	5.5	0.9	25	6.9	1.2	22	7.3
Chichbarak	1.5	14	15.7	1.8	22	15.2	1.7	14	4.3	4	22.8	6.3	1.7	20	14.3
Falafel	2.4	28	10.2	2.1	38	9.7	1.3	26	17.9	2.0	35	9.7	2.9	28	10.7
Fatayer sabanikh	1	18	27.7	1.6	30	28.5	0.9	14	26.2	1.5	97.6	27.1	1.5	18	25.3
Fattat Hommos	2	12	5.2	1.5	12	9.9	2.1	12	6.6	2.3	26.4	7.3	0.4	2	5.8
Fattoush	1	6	3.3	0.8	26	4.8	1.2	8	12.5	3.5	19	5.2	1.3	14	2.6
Foul moudamas	0.6	20	3.3	0.6	48	5.2	2.2	14	4.1	0.7	13.6	3.7	1.5	28	3.9
Hindbe bil zet	2.8	14	9	0.8	18	11.1	1.5	16	14.6	3.1	34.4	9.5	0.4	18	9.9
Hommos bi tahini	1.0	16	4.7	1.8	12	6.6	1.6	16	6.6	2	20	5.5	1.2	18	5.2
Kafta wa batata	0.7	24	22.9	0.6	18	7.2	1.3	16	7.9	1.2	25	6.9	0.8	24	22
Kebba bil sayniya	1.7	24	11.3	1.3	20	11.6	2.2	16	7.5	1.7	37.4	10.3	0.8	22	10.8
Koussa mahchi	0.2	24	7.3	0.5	18	6.5	0.7	14	9.8	1.2	35.2	9.7	0.5	24	6.7
Lahm bil ajin	1	10	11	3.2	14	17.5	2.3	14	9.7	2.7	26.4	7.3	2.1	14	11.2
Loubia bil zet	1.2	12	4.8	0.4	16	6.5	1.2	18	5.1	0.6	41	11.3	0.6	12	4.3
Malfouf mahchi	1.4	36	6	1	14	6	1.4	18	6.2	1.7	54.4	15.1	1	34	6.3
Moujadara	1	8	6.9	0.6	18	6.3	1.3	10	7.8	0.7	33.2	9.2	1	12	7.6
Moghrabia	0.8	8	5.2	1	20	6.7	0.8	4	5.9	1.1	18.2	5	1.2	12	4.9
Mousaka batinjan	1.3	12	5.7	1	38	13.5	0.3	26	5.1	1.2	22.8	6.3	1.2	14	5.4
Riz a dajaj	0.8	14	5.9	0.4	14	21.3	0.2	20	6	0.1	25	6.9	0.8	8	5.4
Riz bi lahma	0.6	8	7.3	0.4	18	9.9	0.8	18	5.9	1.3	21.8	6	0.6	20	7.1
Sayadia	0.2	16	7.3	0.5	30	7.8	0.1	16	3.9	0.4	25	6.9	0.4	28	6.6
Shawarma dajaj	1.5	28	9.2	1.3	24	8.8	1.2	16	8.7	1.2	27.2	7.5	0	16	8.8
Shawarma lahma	0.6	14	8.3	0.6	28	7.9	0.7	8	7.6	0.7	35	9.7	0.6	18	7.6
Tabboula	0.4	22	6	0.8	38	6.7	0.9	12	13.2	0.8	30	8.3	0.5	14	5.4
Warak enab	0.7	26	7.3	0.6	18	9.7	1.7	14	5.9	0.5	20	5.5	0.2	26	7.8
Yakhnat Bamia	0.9	22	8.6	3.7	16	5.9	1.1	18	7.7	1.5	30	8.3	1	14	8.2
Yakhnat Fassoulia	0.6	20	5.2	0.6	14	6.1	0.6	12	10.2	0.7	33.4	9.2	0.6	18	4.9
Yakhnat Mouloukhia	0.6	18	5.8	0.5	18	6.5	0.1	14	5.7	0.6	33.4	9.2	0.5	18	6.5

Table 8. Total sugar, salt, and iron mean values in traditional dishes and the percentage of their daily contribution in a 2000 Kcal-diet.

Dish	Mean Values in 100 g			Percentage of Daily Contribution in 2000 Kcal-diet		
	Tot S.	NaCl	Iron	Tot S.	NaCl	Iron
Baba ghanouj	2.2	0.8	0.7	1.5	17.3	4.1
Batata mahchi	1.3	1	1	0.9	20.3	6
Borgul bi banadoura	1.5	1.1	1.3	1	23.4	7.5
Chichbarak	3.2	0.9	2	2.1	18.5	11.2
Falafel	3.2	1.5	2.1	2.1	31	11.6
Fatayer sabanikh	1.9	1.7	4.8	1.3	35.5	27
Fattat Hommos	2.4	0.6	1.2	1.6	12.8	7
Fattoush	2.3	0.7	1	1.6	14.6	5.7
Foul moudamas	1.7	1.2	0.7	1.1	24.7	4
Hindbe bil zet	2.6	1	1.9	1.7	20	10.8
Hommos bi tahini	2.3	0.8	1	1.5	16.4	5.7
Kafta wa batata	1.4	1	2.4	0.9	21.4	13.4
Kebba bil sayniya	2.3	1.1	1.8	1.5	23.8	10.3
Koussa mahchi	1	1.1	1.4	0.6	23	8
Lahm bil ajin	3.3	0.7	2	2.3	15.6	11.3
Loubia bil zet	1.2	0.9	1.1	0.8	19.8	6.4
Malfouf mahchi	2	1.5	1.4	1.3	31.2	7.9
Moujadara	1.4	0.8	1.3	0.9	16.2	7.6
Moghrabia	1.4	0.6	1	1	12.4	5.5
Mousaka batinjan	1.5	1.1	1.3	1	22.5	7.2
Riz a dajaj	0.7	0.8	1.6	0.5	16.2	9.1
Riz bi lahma	1.1	0.8	1.3	0.7	17.1	7.3
Sayadia	0.5	1.1	1.1	0.3	23	6.5
Shawarma dajaj	1.6	1.1	1.5	1	22.2	8.6
Shawarma lahma	1	1	1.4	0.6	20.6	8.2
Tabboula	1	1.1	1.4	0.7	23.2	7.9
Warak enab	1.1	1	1.3	0.7	20.8	7.3
Yakhnat Bamia	2.4	1	1.4	1.6	20	7.7
Yakhnat Fassoulia	0.9	0.9	1.2	0.6	19.4	7.1
Yakhnat Mouloukhia	0.7	1.0	1.2	0.4	20.2	6.7

Table 9: Total fatty acids, saturated fatty acids, monounsaturated fatty acids, polyunsaturated fatty acids, and trans fat content in 100 grams of traditional dishes from the different governorates.

Dish	Mount Lebanon					Beqaa					Beirut					Tripoli					Saida				
	Fat	S	M	P	TFA	Fat	S	M	P	TFA	Fat	S	M	P	TFA	Fat	S	M	P	TFA	Fat	S	M	P	TFA
Baba ghanouj	4.3	0.7	3	0.5	Tr	8.3	4.4	3.2	0.4	0.07	10.8	4.1	5.8	0.7	0.01	13	9.1	2.8	0.5	0.35	10.8	3.3	5.9	1.4	Tr
Batata mahchi	1.5	0.4	0.5	0.4	0.02	1.7	1	0.5	Tr	0.05	1.3	0.2	0.4	0.6	0.01	0.3	0.2	Tr	Tr	0.01	1.4	0.8	0.4	Tr	0.03
Borgul bi banadoura	6	0.6	1.9	3.3	Tr	4.9	3.1	1.3	0.4	0.03	3.6	3.1	0.3	Tr	0.01	5.9	3.4	2.1	0.2	0.04	4.7	1.9	2.3	0.3	0.03
Chichbarak	2.9	0.8	0.9	1.1	0.01	5.8	4	1.4	0.1	0.13	3.5	3	0.4	Tr	Tr	6.7	5.3	1.2	0.1	0.07	4.2	2.7	1.1	0.3	0.05
Falafel	11	1.4	4.3	5.1	Tr	13.1	5.3	6.5	1.1	0.08	11.4	5.4	5.6	0.3	Tr	8.3	5.3	2.2	0.6	0.07	14.8	4.8	8.3	1.6	0.06
Fatayer sabanikh	1.7	0.1	0.5	0.9	Tr	17.8	2	5.7	10	Tr	13.7	6.6	6	0.9	0.04	17.5	1.8	5.7	9.8	Tr	5.1	2	2.2	0.7	0.03
Fattat Hommos	6	2.6	1.8	1.4	0.04	13.1	5.8	6.4	0.8	0.05	7.7	3	4.5	0.1	Tr	5.5	4.8	0.5	0.1	0.05	2.9	1.6	0.9	0.2	0.04
Fattoush	2.7	0.3	1.5	0.7	Tr	2.6	1.5	0.8	0.1	0.03	3.1	2	1	Tr	0.01	2.8	2.2	0.3	0.1	0.04	3.5	2.4	0.9	Tr	0.04
Foul moudamas	1.4	0.2	0.9	0.2	Tr	2.8	1.7	1	Tr	0.04	1.6	0.2	1.1	0.1	0.00	10	4.8	4.7	0.3	0.05	1.6	0.7	0.7	0.1	0.01
Hindbe bil zet	6.9	1	4.4	1.5	Tr	3.5	1.5	0.9	0.9	0.01	6.4	0.9	4.6	0.7	Tr	15.8	6.4	8.4	0.8	0.06	20.9	5.3	13	2.4	0.04
Hommos bi tahini	2.8	0.3	1	1.4	Tr	5.1	3.1	1.8	0.1	0.04	3.1	0.5	1.5	1	Tr	10.5	6.6	3.2	0.5	0.07	10.7	3.5	5.9	1.1	0.04
Kafta wa batata	9.1	2.9	3.9	1.9	0.19	3.4	2.4	0.8	0.1	0.05	2.8	2.3	0.4	Tr	Tr	7.5	5.6	1.5	0.1	0.11	8.8	5.3	2.9	0.3	0.10
Kebba bil sayniya	4	1	1.6	1.2	0.02	3	2.1	0.7	Tr	0.04	4.4	0.7	2.1	1.5	0.01	11.2	10.2	0.7	Tr	0.12	9.4	4.4	4.4	0.4	0.08
Koussa mahchi	3.8	1	1.4	1.3	0.03	2.5	1.8	0.5	Tr	0.03	1.6	1.3	0.2	Tr	0.00	0.6	0.4	0.1	Tr	0.01	3.6	2.7	0.5	0.2	0.05
Lahm bil ajin	2	0.7	0.9	0.3	0.01	14.1	2.1	3.1	8.8	Tr	3.1	0.4	0.6	1.9	Tr	19.6	6.9	9.2	3.3	0.06	6	4	1.5	0.3	0.07
Loubia bil zet	7.3	1	3.4	2.8	0.01	1	0.5	0.3	Tr	0.01	7.5	1.9	4.6	0.8	0.02	8.4	1.1	3.9	3.3	0.01	4.2	2.7	1.1	0.2	0.04
Malfouf mahchi	1.6	0.5	0.5	0.4	0.02	1.3	0.6	0.5	Tr	0.03	3.1	1	1	0.9	0.02	3.9	2.8	0.9	0.1	0.01	0.7	0.4	0.1	Tr	0.01
Moujadara	6	0.5	2	3.3	Tr	4	2.1	1.4	0.3	0.04	6.2	1.6	3.6	0.9	0.02	6.4	0.6	2.1	3.2	Tr	6.4	2.4	3.5	0.4	0.03
Moghrabia	2.1	0.9	0.7	0.4	0.01	5.7	2.9	2.1	0.5	0.05	3	1.3	1	0.6	0.00	13	3.6	1.4	0.3	0.14	3.4	2.1	0.9	0.2	0.01
Mousaka batinjan	4.9	0.5	1.7	2.6	Tr	3.9	2.4	1.1	0.1	0.05	9.8	6.8	2.4	0.4	0.03	0.3	5.7	2.3	0.5	0.05	5.6	1.6	3.4	0.5	0.02
Riz a dajaj	5.9	0.9	2.7	2.1	0.03	5.1	2.9	1.7	0.3	0.05	6.8	3.7	1.9	0.3	0.76	5.9	0.5	1.6	1.2	0.02	5.8	2.7	2.3	0.6	0.05
Riz bi lahma	7.4	1.1	3.7	2.5	0.03	5.6	3.1	2.1	0.3	0.03	7.4	4.3	2.9	Tr	0.01	6.7	6.5	0.7	0.1	0.14	4.6	2.2	1.9	0.4	0.05
Sayadia	2.9	0.3	1.2	1.3	Tr	7.4	5	1.9	0.4	0.04	5.6	3.2	1.8	0.4	0.01	8.3	1.3	4.5	4.7	Tr	5.9	2.3	2.8	0.7	0.03
Shawarma dajaj	3.6	0.5	1.2	1.8	Tr	10.4	5	4	1.2	0.05	8.7	4.2	3.4	0.9	0.03	17.5	3.5	1.5	0.2	Tr	6.7	3	2.9	0.6	0.02
Shawarma lahma	8.8	5.6	2.6	0.3	0.18	9.8	4.2	4.6	0.7	0.07	5.6	4.1	0.9	0.2	0.25	5.5	4.6	2.2	0.2	0.15	9.9	6.1	3.1	0.4	0.18
Tabboula	0.6	0	0.4	Tr	Tr	3.6	2.1	1.3	0.1	0.04	5.1	3.4	1.5	Tr	0.02	2.8	Tr	0.2	Tr	Tr	11.6	2.9	7.9	0.6	Tr
Warak enab	5.1	2.5	1.7	0.7	0.08	3.3	2.7	0.4	0.1	0.03	4.8	3.2	1	0.4	0.04	10	2.1	1.4	0.5	0.07	2.5	1.7	0.5	0.1	0.03
Yakhnat Bamia	2.9	0.3	1	1.5	Tr	5.4	2.8	2	0.4	0.09	5.7	4.3	0.7	0.4	0.11	15.8	9.1	1	0.1	0.18	2.6	1.7	0.5	0.2	0.03
Yakhnat Fassoulia	1.9	0.2	0.6	1	Tr	3.1	2	0.7	0.2	0.02	1.6	1.1	0.4	Tr	0.01	10.5	7.7	1.6	0.1	0.16	3.3	2.1	0.8	0.2	0.02
Yakhnat mouloukhia	1.5	0.1	0.5	0.8	Tr	3.1	2	0.8	Tr	0.06	6.2	3.7	2	0.4	0.01	7.5	3.7	1.6	0.1	0.14	4.9	2.8	1.4	0.5	0.03

Table 10 : Daily contribution of 100 grams of a traditional dish as percentage of total fatty acids, saturated fatty acids, monounsaturated fatty acids, polyunsaturated fatty acids, and trans fat in a 2000 Kcal-diet.

	Percentage of Daily Contributions of Nutrients tested in 2000 Kcal-diet																								
Dish	Mount Lebanon					Beqaa					Beirut					Tripoli					Saida				
	Fat	S	M	P	TFA	Fat	S	M	P	TFA	Fat	S	M	P	TFA	Fat	S	M	P	TFA	Fat	S	M	P	TFA
Baba ghanouj	5.5	3.5	6.9	2.3	Tr	10.6	22.3	7.4	2.1	3	13.8	20.6	13.3	3.4	0.4	16.6	45.9	6.5	2.6	15.9	13.8	16.9	13.5	6.6	Tr
Batata mahchi	1.9	2.4	1.1	2.2	0.8	2.1	5.3	1.1	0.2	2.3	1.6	1	0.9	2.9	0.3	0.3	1	0.1	Tr	0.4	1.7	4.4	0.9	0.3	1.2
Borgul bi banadoura	7.6	3.2	4.4	15.3	Tr	6.2	15.5	3	1.8	1.5	4.6	15.8	0.8	0.2	0.6	7.5	17.3	4.8	1.2	1.6	6	9.8	5.2	1.6	1.5
Chichbarak	3.7	4	2.2	5	0.2	7.4	20.4	3.2	0.6	6	4.4	15	1	0.0	Tr	8.5	26.5	2.7	0.4	3.3	5.3	13.7	2.5	1.3	2.4
Falafel	13.9	7.3	9.8	23.2	Tr	16.7	26.8	14.7	5.2	3.5	14.6	27.2	12.7	1.5	Tr	10.6	26.6	5.1	2.9	3	18.9	24	18.8	7.4	2.6
Fatayer sabanikh	2.1	0.8	1.2	4.3	Tr	22.8	10	13	45.6	Tr	17.5	33.4	13.6	4.3	1.8	22.4	9.1	13.1	44.9	Tr	6.5	10.2	5.1	3.3	1.1
Fattat Hommos	7.6	13.3	4.1	6.7	1.9	16.7	29.1	14.5	3.6	2.3	9.8	15.1	10.3	0.4	Tr	7	24.1	1.1	0.5	2.2	3.7	8.3	2	1.3	1.7
Fattoush	3.4	1.7	3.5	3.5	Tr	3.3	7.9	1.9	0.4	1.5	3.9	10.2	2.3	0.1	0.2	3.5	11.2	0.8	0.5	1.7	4.4	12.4	2.1	0.1	1.7
Foul moudamas	1.7	1.1	2.2	0.8	Tr	3.5	8.5	2.3	0.1	1.6	2	1.3	2.6	0.8	0.07	12.8	24	10.8	1.7	2.2	2	3.7	1.6	0.5	0.2
Hindbe bil zet	8.8	5.3	10.1	6.9	Tr	4.4	7.5	2.2	4.4	0.4	8.2	4.7	10.6	3.5	Tr	20.2	32	19.1	4	2.8	26.7	26.7	29.6	11.1	1.9
Hommos bi tahini	3.5	1.7	2.4	6.3	Tr	6.5	15.5	4	0.7	1.8	3.9	2.5	3.5	4.6	Tr	13.4	33.2	7.3	2.5	3.3	13.7	17.9	13.5	5	1.9
Kafta wa batata	11.6	14.7	9	8.9	8.6	4.3	12.1	1.8	0.5	2.4	3.5	11.6	0.9	0.1	Tr	9.6	28.3	3.4	0.8	5.1	11.2	26.8	6.7	1.7	4.4
Kebba bil sayniya	5.1	5.4	3.7	5.7	1	3.8	10.7	1.7	0.1	1.9	5.6	3.7	4.8	6.8	0.6	14.3	51.3	1.7	0.3	5.6	12	22	10.1	2	3.8
Koussa mahchi	4.8	5.2	3.2	6	1.2	3.2	9.3	1.1	0.3	1.3	2	6.5	0.6	0	0.2	0.7	2.1	0.3	Tr	0.6	4.6	13.8	1.2	0.9	2.4
Lahm bil ajin	2.5	3.5	2.1	1.5	0.2	18	10.6	7.1	40	Tr	3.9	2.3	1.5	8.8	Tr	25.1	34.5	21.1	15.1	2.6	7.6	20.1	3.5	1.5	3
Loubia bil zet	9.3	5	7.7	13	0.3	1.2	2.5	0.8	0.4	0.5	9.6	9.8	10.5	3.9	0.6	10.7	5.7	8.9	15	0.3	5.3	13.8	2.6	1	1.7
Malfouf mahchi	2	2.8	1.2	2.2	0.7	1.6	3.4	1.1	0.3	1.3	3.9	5.3	2.4	4.3	0.8	5	14.1	2.1	0.5	0.5	0.9	2.4	0.3	0.1	0.4
Moujadara	7.6	2.9	4.6	15.3	Tr	5.1	10.9	3.3	1.4	1.6	7.9	8.2	8.1	4.2	1.1	8.2	3.1	4.9	14.6	Tr	8.2	12.1	7.9	2	1.4
Moghrabia	2.6	4.6	1.6	1.9	0.4	7.3	14.9	4.9	2.2	2.3	3.8	6.7	2.3	2.7	0.1	7	18.2	3.1	1.4	6.5	4.3	10.8	2.2	1.1	0.3
Mousaka batinjan	6.2	2.5	3.9	12.1	Tr	5	12.4	2.6	0.8	2.1	12.5	34.3	5.5	2.1	1.3	11.1	28.5	5.3	2.6	2.3	7.1	8	7.7	2.4	1
Riz a dajaj	7.5	4.8	6.2	9.8	1.3	6.5	14.7	3.9	1.6	2.3	8.7	18.9	4.4	1.3	34.6	4.4	2.8	3.7	5.8	0.8	7.4	13.7	5.4	2.7	2.3
Riz bi lahma	9.4	5.8	8.4	11.3	1.3	7.1	15.5	4.8	1.5	1.5	9.4	21.5	6.7	0.3	0.6	9.7	32.7	1.6	0.7	6.5	5.9	11.2	4.3	1.8	2
Sayadia	3.7	1.8	2.8	5.8	Tr	9.4	25.2	4.3	1.9	1.6	7.18	16.2	4.2	2	0.2	13.5	6.5	10.3	21.5	Tr	7.5	11.5	6.4	3.3	1.3
Shawarma dajaj	4.6	2.5	2.9	8.2	Tr	13.3	25.1	9.1	5.8	2.3	11.1	21.4	7.9	4	1.5	6.7	17.7	3.4	0.9	Tr	8.5	15.4	6.7	2.8	0.9
Shawarma lahma	11.2	28.1	6	1.5	8.4	12.5	21.3	10.6	3.6	3.1	7.1	20.7	2.1	1.2	11.4	9.3	23.2	5	1.1	6.9	12.6	30.5	7.2	1.9	8.1
Tabboula	0.7	0.4	1	0.2	Tr	4.6	10.5	2.9	0.6	1.9	6.5	17.4	3.5	0.2	0.7	0.3	0.2	0.5	0.1	Tr	14.8	14.8	18.1	2.9	Tr
Warak enab	6.5	12.7	4	3.2	3.7	4.2	13.7	0.9	0.5	1.5	6.1	16	2.4	2	1.7	5.3	10.4	3.3	2.6	3	3.2	8.8	1.2	0.7	1.3
Yakhnat Bamia	3.7	1.7	2.2	7	Tr	6.9	14.1	4.6	2	3.9	7.3	21.8	1.7	2	4.9	13.4	45.7	2.3	0.6	8.1	3.3	8.9	1.2	1	1.1
Yakhnat Fassoulia	2.4	1.2	1.4	4.5	0.1	3.9	10.4	1.7	0.9	0.9	2	5.8	0.9	0.1	0.4	12.3	38.5	3.6	0.5	7.4	4.2	10.7	1.9	1.2	0.9
Yakhnat mouloukhia	1.9	0.8	1.1	3.8	Tr	3.9	10.3	2	0.4	2.5	7.9	18.4	4.6	2	0.2	7.3	18.7	3.6	0.8	6.4	6.2	14.1	3.3	2.5	1.3

Table 11 : Polyunsaturated fatty acids, monounsaturated fatty acids, and saturated fatty acids ratios in 100 grams of all samples.

Dish	Mount Lebanon					Beqaa					Beirut					Tripoli					Saida				
	Fatty Acids Ratios					Fatty Acids Ratios					Fatty Acids Ratios					Fatty Acids Ratios					Fatty Acids Ratios				
	S	P:S	M:S	P:M	P:M:S	S	P:S	M:S	P:M	P:M:S	S	P:S	M:S	P:M	P:M:S	S	P:S	M:S	P:M	P:M:S	S	P:S	M:S	P:M	P:M:S
Baba ghanouj	1	0.7	4.2	0.1	0.7:4.2:1	1	0.1	0.7	0.1	0.1:0.7:1	1	0.1	1.4	0.1	0.1:1.4:1	1	0	0.3	0.2	0:0.3:1	1	0.4	1.7	0.2	0.4:1.7:1
Batata mahchi	1	0.9	1	0.9	0.9:1:1	1	0	0.4	0.1	0:0.4:1	1	3	1.9	1.5	3:1.8:1	1	0	0.3	0.1	0:0.3:1	1	0	0.4	0.1	0:0.4:1
Borgul bi banadoura	1	5.2	3	1.7	5.2:3:1	1	0.1	0.4	0.3	0.1:0.4:1	1	0	0.1	0.1	0:0.1:1	1	0	0.6	0.1	0:0.6:1	1	0.1	1.1	0.1	0.1:1.1:1
Chichbarak	1	1.3	1.2	1.1	1.3:1.2:1	1	0	0.3	1	0:0.3:1	1	0	0.1	0	0.0:0.1:1	1	0	0.2	0	0:0.2:1	1	0.1	0.4	0.2	0.1:0.4:1
Falafel	1	3.4	2.9	1.1	3.4:2.9:1	1	0.2	1.2	0.1	0.2:1.2:1	1	0	1	0	0:1:1	1	0.1	0.4	0.2	0.1:0.4:1	1	0.3	1.7	0.2	0.3:1.7:1
Fatayer sabanikh	1	5.4	3.1	1.7	5.4:3.1:1	1	4.9	2.8	1.7	4.9:2.8:1	1	0.1	0.9	0.1	0.1:0.9:1	1	5.4	3.1	1.7	5.4:3.1:1	1	0.3	1.1	0.3	0.3:1.1:1
Fattat Hommos	1	0.5	0.6	0.8	0.5:0.6:1	1	0.1	1.1	0.1	0.1:1.1:1	1	0	1.5	0	0:1.5:1	1	0	0.1	0.2	0:0.1:1	1	0.1	0.5	0.3	0.1:0.5:1
Fattoush	1	2.1	4.4	0.4	2.1:4.4:1	1	0	0.5	0.1	0:0.5:1	1	0	0.5	0	0:0.5:1	1	0	0.1	0.3	0:0.1:1	1	0	0.3	0	0:0.3:1
Foul moudamas	1	0.8	4.3	0.2	0.8:4.3:1	1	0	0.6	0	0:0.6:1	1	0.6	4.2	0.1	0.6:4.2:1	1	0	0.9	0	0:0.9:1	1	0.1	0.9	0.1	0.1:0.9:1
Hindbe bil zet	1	1.4	4.1	0.3	1.4:4.1:1	1	0.6	0.6	0.9	0.6:0.6:1	1	0.8	4.9	0.1	0.8:4.9:1	1	0.1	1.3	0.1	0.1:1.3:1	1	0.4	2.4	0.1	0.4:2.4:1
Hommos bi tahini	1	4	3	1.3	4:3:1	1	0	0.5	0	0:0.5:1	1	2	3.1	0.6	2:3.1:1	1	0	0.4	0.1	0:0.4:1	1	0.3	1.6	0.1	0.3:1.6:1
Kafta wa batata	1	0.6	1.3	0.5	0.6:1.3:1	1	0	0.3	0.1	0:0.3:1	1	0	0.1	0.1	0:0.1:1	1	0	0.2	0.1	0:0.2:1	1	0	0.5	0.1	0:0.5:1
Kebba bil sayniya	1	1.1	1.5	0.7	1.1:1.5:1	1	0	0.3	0	0:0.3:1	1	2	2.8	0.7	2:2.8:1	1	0	0	0	0:0:1	1	0.1	1	0.1	0.1:1:1
Koussa mahchi	1	1.2	1.3	0.9	1.2:1.3:1	1	0	0.2	0.1	0:0.2:1	1	0	0.2	0	0:0.2:1	1	0	0.3	0	0:0.3:1	1	0	0.2	0.3	0:0.2:1
Lahm bil ajin	1	0.4	1.3	0.3	0.4:1.3:1	1	4.1	1.4	2.7	4.1:1.4:1	1	4.1	1.4	2.8	4.1:1.4:1	1	0.4	1.3	0.3	0.4:1.3:1	1	0	0.3	0.2	0:0.3:1
Loubia bil zet	1	2.8	3.4	0.8	2.8:3.4:1	1	0.1	0.7	0.2	0.1:0.7:1	1	0.4	2.3	0.1	0.4:2.3:1	1	2.8	3.4	0.8	2.8:3.4:1	1	0	0.4	0.1	0:0.4:1
Malfouf mahchi	1	0.8	0.9	0.9	0.8:0.9:1	1	0.1	0.7	0.1	0.1:0.7:1	1	0.8	0.9	0.9	0.8:0.9:1	1	0	0.3	0.1	0:0.3:1	1	0	0.3	0.2	0:0.3:1
Moujadara	1	5.6	3.4	1.6	5.6:3.4:1	1	0.1	0.6	0.2	0.1:0.6:1	1	0.5	2.1	0.2	0.5:2.1:1	1	5	3.4	1.4	5:3.4:1	1	0.1	1.4	0.1	0.1:1.4:1
Moghrabia	1	0.4	0.7	0.5	0.4:0.7:1	1	0.1	0.7	0.2	0.1:0.7:1	1	0.4	0.7	0.5	0.4:0.7:1	1	0	0.3	0.2	0:0.3:1	1	0.1	0.4	0.2	0.1:0.4:1
Mousaka batinjan	1	5.3	3.4	1.5	5.3:3.4:1	1	0	0.4	0.1	0:0.4:1	1	0	0.3	0.1	0:0.3:1	1	0.1	0.4	0.2	0.1:0.4:1	1	0.3	2.1	0.1	0.3:2.1:1
Riz a dajaj	1	2.2	2.8	0.7	2.2:2.8:1	1	0.1	0.5	0.2	0.1:0.5:1	1	0	0.5	0.1	0:0.5:1	1	2.2	2.8	0.7	2.2:2.8:1	1	0.2	0.8	0.2	0.2:0.8:1
Riz bi lahma	1	2.1	3.1	0.6	2.1:3.1:1	1	0.1	0.6	0.1	0.1:0.6:1	1	0	0.6	0	0:0.6:1	1	0	0.1	0.2	0:0.1:1	1	0.1	0.8	0.2	0.1:0.8:1
Sayadia	1	3.6	3.4	1	3.6:3.4:1	1	0	0.3	0.2	0:0.3:1	1	0.1	0.5	0.2	0.1:0.5:1	1	3.6	3.4	1	3.6:3.4:1	1	0.3	1.2	0.2	0.3:1.2:1
Shawarma dajaj	1	3.5	2.5	1.4	3.5:2.5:1	1	0.2	0.8	0.3	0.2:0.8:1	1	0.2	0.8	0.2	0.2:0.8:1	1	0	0.4	0.1	0:0.4:1	1	0.2	0.9	0.2	0.2:0.9:1
Shawarma lahma	1	0	0.4	0.1	0:0.4:1	1	0.1	1.1	0.1	0.1:1.1:1	1	0	0.2	0.2	0:0.2:1	1	0	0.4	0.1	0:0.4:1	1	0	0.5	0.1	0:0.5:1
Tabboula	1	0.6	4.7	0.1	0.6:4.7:1	1	0	0.6	0.1	0:0.6:1	1	0	0.4	0	0:0.4:1	1	0.6	4.7	0.1	0.6:4.7:1	1	0.2	2.6	0	0.2:2.6:1
Warak enab	1	0.2	0.6	0.4	0.2:0.6:1	1	0	0.1	0.2	0:0.1:1	1	0.1	0.3	0.4	0.1:0.3:1	1	0.2	0.6	0.4	0.2:0.6:1	1	0	0.3	0.3	0:0.3:1
Yakhnat Bamia	1	4.3	2.8	1.5	4.3:2.8:1	1	0.1	0.7	0.2	0.1:0.7:1	1	0.1	0.1	0.5	0.1:0.1:1	1	0	0.1	0.1	0:0.1:1	1	0.1	0.3	0.4	0.1:0.3:1
Yakhnat Fassoulia	1	4.2	2.7	1.5	4.2:2.7:1	1	0.1	0.3	0.2	0.1:0.3:1	1	0	0.3	0	0:0.3:1	1	0	0.2	0.	0:0.2:1	1	0.1	0.4	0.3	0.1:0.4:1
Yakhnat Mouloukhia	1	5.1	3	1.6	5.1:3:1	1	0	0.4	0.1	0:0.4:1	1	0.1	0.5	0.2	0.1:0.5:1	1	0	0.4	0.1	0:0.4:1	1	0.2	0.5	0.3	0.2:0.5:1

Table 12. Fatty acid ratios and total fatty acids and trans- fats mean values in traditional dishes and the percentage of their daily contribution in 2000 Kcal-diet.

| Dish | Mean Values in 100 g | | | | | Mean Values in 100 g | | | | | Mean Values in 100 g | | | |
| | Amounts in 100 g of edible portions | | | | | Percentage of Daily Contribution in 2000Kcal diet | | | | | Fatty Acid Ratios | | | |
	Fat	SFA	MUFA	PUFA	TFA	Fat	SFA	MUFA	PUFA	TFA	P:S	M:S	P:M	P:M:S
Baba ghanouj	9.4	4.3	4.2	0.7	0.09	12.1	21.9	9.5	5.8	3.8	0.1	0.9	0.1	0.1:0.9:1
Batata mahchi	1.2	0.5	0.3	0.2	0.02	1.5	2.8	0.8	1.9	1	0.4	0.6	0.6	0.4:0.6:1
Borgul bi banadoura	5	2.4	1.6	0.9	0.02	6.4	12.3	3.6	6.9	1	0.3	0.6	0.5	0.3:0.6:1
Chichbarak	4.6	3.1	1	0.3	0.05	5.9	15.9	2.3	2.5	2.4	0.1	0.3	0.3	0.1:0.3:1
Falafel	11.7	4.4	5.4	1.7	0.04	15	22.4	12.2	13.6	1.8	0.3	1.2	0.3	0.3:1.2:1
Fatayer sabanikh	11.1	2.5	4	4.5	0.01	14.3	12.7	9.2	34.7	0.6	1.7	1.6	1.1	1.7:1.6:1
Fattat Hommos	7	3.6	2.8	0.5	0.04	9	18	6.4	4.3	1.6	0.1	0.7	0.2	0.1:0.7:1
Fattoush	2.4	1.7	0.9	0.2	0.02	3.7	8.7	2.1	1.6	1	0.1	0.5	0.2	0.1:0.5:1
Foul moudamas	3.4	1.5	1.7	0.1	0.02	4.4	7.7	3.9	1.3	0.8	0.1	1.1	0.1	0.1:1.1:1
Hindbe bil zet	10.7	3	6.3	1.3	0.02	13.7	15.2	14.3	10.2	1	0.4	2	0.2	0.4:2.:1
Hommos bi tahini	6.4	2.8	2.7	0.8	0.03	8.2	14.2	6.1	6.5	1.4	0.3	0.9	0.3	0.3:0.9:1
Kafta wa batata	6.3	3.7	1.9	0.5	0.09	8.1	18.7	4.4	4.1	4.1	0.1	0.5	0.2	0.1:0.5:1
Kebba bil sayniya	6.4	3.7	1.9	0.6	0.06	8.2	18.6	4.4	5.1	2.6	0.1	0.5	0.3	0.1:0.5:1
Koussa mahchi	2.4	1.4	0.5	0.3	0.03	3.1	7.4	1.3	2.5	1.1	0.2	0.3	0.5	0.2:0.3:1
Lahm bil ajin	8.9	2.8	3.1	2.9	0.03	11.4	14.2	7.1	22.7	1.1	1	1.1	0.9	1:1.1:1
Loubia bil zet	5.6	1.4	2.7	1.4	0.02	7.2	7.3	6.1	11.3	0.7	1	1.8	0.5	1:1.8:1
Malfouf mahchi	2.1	1.1	0.6	0.3	0.02	2.7	5.6	1.4	2.5	0.7	0.3	0.5	0.5	0.3:0.5:1
Moujadara	5.8	1.4	2.5	1.6	0.02	7.4	7.4	5.8	12.7	0.8	1.1	1.7	0.6	1.1:1.7:1
Moghrabia	3.9	2.2	1.2	0.4	0.04	5	11	2.8	3.2	1.9	0.1	0.5	0.3	0.1:0.5:1
Mousaka batinjan	6.5	3.4	2.2	0.8	0.03	8.4	17.1	5	6.8	1.3	0.2	0.6	0.4	0.2:0.6:1
Riz a dajaj	5.4	2.2	2	0.9	0.18	6.9	11	4.7	7.2	8.2	0.4	0.9	0.4	7.2:0.4:1
Riz bi lahma	6.5	3.4	2.3	0.6	0.05	8.3	17.3	5.2	5.3	2.4	0.2	0.6	0.3	0.2:0.6:1
Sayadia	6.4	2.4	2.4	1.5	0.01	8.3	12.2	5.6	11.7	0.6	0.6	1	0.6	0.6:1:1
Shawarma dajaj	6.9	3.2	2.6	0.9	0.02	8.9	16.4	6	7.4	0.9	0.2	0.8	0.3	0.2:0.8:1
Shawarma lahma	8.2	4.9	2.7	0.4	0.17	10.6	24.8	6.2	3.2	7.6	0	0.5	0.1	0:0.5:1
Tabboula	4.2	1.7	2.3	0.1	0.01	5.4	8.7	5.2	1.4	0.5	0.1	1.3	0	0.1:1.3:1
Warak enab	3.9	2.4	1	0.4	0.05	5.1	12.3	2.3	3.1	2.2	0.1	0.4	0.3	0.1:0.4:1
Yakhnat Bamia	5.4	3.7	1	0.5	0.08	6.9	18.4	2.4	4.3	3.6	0.1	0.2	0.5	0.1:0.2:1
Yakhnat Fassoulia	3.9	2.6	0.8	0.3	0.04	5.0	13.3	1.9	2.5	1.9	0.1	0.3	0.3	0.1:0.3:1
Yakhnat Mouloukhia	4.2	2.5	1.3	0.4	0.05	5.4	12.5	2.9	3.2	2.1	0.1	0.5	0.3	0.1:0.5:1

Table 13. Carbohydrate, fat, protein, ash, moisture and energy content of traditional dishes and the percentage of their daily contribution in a 2000 Kcal-diet.

Dish	Amounts in 100 g of Edible Portion (per gram)						Percentage of Daily Contribution in 2000 Kcal-diet			
	Moisture	Ash	CHO	Protein	Fat	Energy	CHO	Protein	Fat	Energy
Baba ghanouj	91.5	1.1	4.5	1.1	1.8	39	1.6	2.2	2.3	1.9
Batata mahchi	69.5	1.8	18	5	5.7	143	6.5	10	7.3	7.1
Borgul bi banadoura	69.1	1.5	20.8	3	5.6	146	7.5	6	7.1	7.3
Chichbarak	68.1	1.7	18.7	4.8	6.7	154	6.8	9.6	8.5	7.7
Falafel	31.3	3.4	36.5	13.3	15.6	339	13.2	26.6	20	16.9
Fatayer sabanikh	45	2.4	27.2	5.3	20.1	311	9.8	10.6	25.7	15.5
Fattat Hommos	68.7	1.3	15.8	6.5	7.7	159	5.7	13	9.8	7.9
Fattoush	88.1	1.3	7.2	1.5	1.9	52	2.6	3	2.4	2.6
Foul moudamas	75.3	1	14.2	5.3	4.2	116	5.1	10.6	5.3	5.8
Hindbe bil zet	67.7	1.5	5.9	2.5	22.4	235	2.1	5	28.7	11.7
Hommos bi tahini	68.2	1.9	17.2	7.5	5.2	146	6.2	15	6.6	7.3
Kafta wa batata	79.3	1.5	7	8.8	3.4	94	2.5	17.6	4.3	4.7
Kebba bil sayniya	51.4	1.8	19.7	11.3	15.8	266	7.1	22.6	20.2	13.3
Koussa mahchi	71.6	1.4	20.3	3.8	2.9	123	7.3	7.6	3.7	6.1
Lahm bil ajin	44.6	1.5	37.1	11.2	5.6	244	13.4	22.4	7.1	12.2
Loubia bil zet	86.5	1.4	7.2	2.1	2.8	62	2.6	4.2	3.5	3.1
Malfouf mahchi	81.5	1.3	12.1	3.8	1.3	75	4.4	7.6	1.6	3.7
Moujadara	71.1	1.2	21.8	5.4	0.5	113	7.9	10.8	0.6	5.6
Moghrabia	72.8	1	15.6	6.7	3.9	124	5.6	13.4	5	6.2
Mousaka batinjan	70.6	1.1	14.8	3.2	10.3	165	5.3	6.4	13.2	8.2
Riz a dajaj	65.4	1.6	18.8	7.2	7	167	6.8	14.4	8.9	8.3
Riz bi lahma	63	1.7	23	7.5	4.8	165	8.3	15	6.1	8.2
Sayadia	64.2	0.9	22.1	6.5	6.3	171	8	13	8	8.5
Shawarma dajaj	58.6	2.4	1.1	29.7	8.2	197	0.4	59.4	10.5	9.8
Shawarma lahma	67.3	1.6	2.6	17.5	11	179	0.9	35	14.1	8.9
Tabboula	88.3	1.4	6.1	1.9	2.3	53	2.2	3.8	2.9	2.6
Warak enab	75.1	1.3	17.7	4.4	1.5	102	6.4	8.8	1.9	5.1
Yakhnat Bamia	73.5	1.3	17	3.9	4.3	122	6.1	7.8	5.5	6.1
Yakhnat Fassoulia	66.3	1.1	22.6	8.1	1.9	140	8.2	16.2	2.4	7
Yakhnat Mouloukhia	76.3	1.6	11.9	5.4	4.8	112	4.3	10.8	6.1	5.6

Table 14. Fibre, vitamin A, vitamin D, vitamin E, vitamin C content of traditional dishes and the percentage of their daily contribution in 2000 Kcal-diet.

Dish	Amounts in 100 g of Edible Portion (per gram)						Percentage of Daily Contribution in 2000 Kcal-diet			
	Fibre	Vit A	Vit D	Vit E	Vit C	Fibre	Vit A	Vit D	Vit E	Vit C
Baba ghanouj	3.1	Tr	Tr	0.1	Tr	11	Tr	Tr	1	Tr
Batata mahchi	1.8	Tr	Tr	Tr	Tr	6.4	Tr	Tr	Tr	Tr
Borgul bi banadoura	4.2	Tr	Tr	1.5	Tr	15	Tr	Tr	10	Tr
Chichbarak	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr
Falafel	8.7	Tr	Tr	0.1	Tr	31	Tr	Tr	0.8	Tr
Fatayer sabanikh	2.1	Tr	Tr	0.1	Tr	7.5	Tr	Tr	0.7	Tr
Fattat Hommos	5.5	Tr	Tr	0.5	Tr	19.6	Tr	Tr	3.8	Tr
Fattoush	6	Tr	Tr	0.1	7.2	21.4	Tr	Tr	0.8	8
Foul moudamas	3.5	Tr	Tr	0.2	10	12.5	Tr	Tr	1.4	11.1
Hindbe bil zet	5.3	Tr	Tr	0.8	2.6	18.9	Tr	Tr	5.8	2.8
Hommos bi tahini	5.7	Tr	Tr	Tr	Tr	20.3	Tr	Tr	Tr	Tr
Kafta wa batata	1.4	Tr	Tr	Tr	Tr	5	Tr	Tr	Tr	Tr
Kebba bil sayniya	4.8	Tr	Tr	Tr	Tr	17.1	Tr	Tr	Tr	Tr
Koussa mahchi	1	Tr	Tr	Tr	Tr	3.5	Tr	Tr	Tr	Tr
Lahm bil ajin	1	Tr	Tr	Tr	Tr	3.5	Tr	Tr	Tr	Tr
Loubia bil zet	1.9	Tr	Tr	0.5	2.6	6.7	Tr	Tr	3.9	2.8
Malfouf mahchi	1.3	Tr	Tr	Tr	Tr	4.6	Tr	Tr	Tr	Tr
Moujadara	5.4	Tr	Tr	Tr	Tr	19.2	Tr	Tr	Tr	Tr
Moghrabia	Tr	Tr	Tr	0.1	Tr	Tr	Tr	Tr	0.8	Tr
Mousaka batinjan	3.5	Tr	Tr	0.2	5.6	12.5	Tr	Tr	1.9	6.2
Riz a dajaj	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr
Riz bi lahma	0.8	Tr	Tr	Tr	Tr	2.8	Tr	Tr	Tr	Tr
Sayadia	Tr	Tr	3.2	Tr	Tr	Tr	Tr	16	Tr	Tr
Shawarma dajaj	Tr	Tr	Tr	0.9	Tr	Tr	Tr	Tr	6.4	Tr
Shawarma lahma	Tr	Tr	Tr	Tr	3.8	Tr	Tr	Tr	Tr	4.2
Tabboula	3.2	Tr	Tr	0.1	21	11.4	Tr	Tr	0.8	23.3
Warak enab	6.7	Tr	Tr	Tr	Tr	23.9	Tr	Tr	Tr	Tr
Yakhnat Bamia	3	Tr	Tr	Tr	Tr	10.7	Tr	Tr	Tr	Tr
Yakhnat Fassoulia	7.4	Tr	Tr	Tr	Tr	26.4	Tr	Tr	Tr	Tr
Yakhnat Mouloukhia	2	Tr	Tr	Tr	Tr	7.1	Tr	Tr	Tr	Tr

Table 15. Exchange list for commonly consumed traditional dishes.

Dish	Serving Exchanges per 100g	Serving size per measurement tool	Exchange per serving size	Amounts per Serving in gram and Kcal			
				CHO	Protein	Fat	Energy
Baba ghanouj	1 vegetable, 0.25 fat	100 g (6 Tbsp)	1 vegetable, 0.25 fat	4.5	1.1	1.8	39
Batata mahchi	1,25 starch, 1 fat	100 g (1 Large or 3 small)	1,25 starch, 1 fat	18	5	5.7	143
Borgul bi banadoura	1,5 starch, 0.5 fat	100 g (1/2 cup)	1,5 starch, 0.5 fat	20.8	3	5.6	146
Chichbarak	1 starch, 0.5 LM	100 g (1/2 cup)	1 starch, 0.5 WM	18.7	4.8	6.7	154
Falafel	2 starch, 2 MFM, 0.5 fat	40 g (2 patty balls)	1 starch, 1 MFM	14.6	5.3	6.2	135.6
Fatayer sabanikh	1.5 starch, 1 protein, 4 fat	55 g (1 triangle)	1 starch, 2 fat	14.9	2.9	11.0	171.0
Fattat Hommos	1 whole milk	100 g (1/2 cup)	1 WM	15.8	6.5	7.7	159
Fattoush	1 vegetable, 0.5 fat	200 g (1 cup)	2 vegetable, 1 fat	14.4	3	3.8	104
Foul moudamas	1 starch, 1 LM	100 g (1/2 cup)	1 starch, 1 LM	14.2	5.3	4.2	116
Hindbe bil zet	1 vegetable, 4,5 fat	50 g (1/4 cup)	0.5 vegetable, 2 fat	2.9	1.2	11.2	117.5
Hommos bi tahini	1 starch, 1 MFM	100 g (6 Tbsp)	1 starch, 1 MFM	17.2	7.5	5.2	146
Kafta wa batata	0.5 starch, 1 LM, 0.25 fat	200 g (1 cup)	1 starch, 2 LM, 0.25 fat	14	17.6	6.8	188
Kebba bil sayniya	1,25 starch, 1,5 HFM	76 g (half a square)	1 starch, 1 HFM, 0.5 fat	14.9	8.5	12.0	202.1
Koussa mahchi	1 starch, 1 vegetable, 0.5 fat	100 g (2 Medium)	1 starch, 1 vegetable, 0.5 fat	20.3	3.8	2.9	123
Lahm bil ajin	2,5 starch, 1 LM	40 g (2 medium piece)	1 starch, 0.5 LM	14.8	4.4	2.24	97.6
Loubia bil zet	1,5 vegetable, 0.5 fat	100 g (1/2 cup)	1.5 vegetable, 0.5 fat	7.2	2.1	2.8	62
Malfouf mahchi	1 vegetable, 0.5 starch	100 g (4 pieces)	1 vegetable, 0.5 starch	12.1	3.8	1.3	75
Moujadara	1 starch, 0.5 LM	100 g (1/2 cup)	1 starch, 0.5 LM	21.8	5.4	0.5	113
Moghrabia	1 starch, 1 LM	100 g (1/2 cup)	1 starch, 1 LM	15.6	6.7	3.9	124
Mousaka batinjan	1 starch, 2 fat	100 g (1/2 cup)	1 starch, 2 fat	14.8	3.2	10.3	165
Riz a dajaj	1 starch, 1LM, 1 fat	100 g (1/2 cup)	1 starch, 1 LM, 1 fat	18.8	7.2	7	167
Riz bi lahma	1 starch, 1 LM, 1 fat	65 g (1/3 cup)	1 starch, 0.5 LM	14.9	4.8	3.1	107.2
Sayadia	1, 25 starch, 1 MFM	100 g (1/2 cup)	1, 25 starch, 1 MFM	22.1	6.5	6.3	171
Shawarma dajaj	4,25 LM	54 g (4 Tbsp)	2 LM,0.25 fat	0.5	16.0	4.4	106.3
Shawarma lahma	2,25 MF, 0.25 fat	50 g (4 Tbsp)	1 MF, 0.25 fat	1.3	8.7	5.5	89.5
Tabboula	1 vegetable, 0.5 fat	200 g (1 cup)	2 vegetable, 1 fat	12.2	3.8	4.6	106
Warak enab	1 vegetable,1 starch	100 g (6 pieces)	1 vegetable,1 starch	17.7	4.4	1.5	102
Yakhnat Bamia	0.5 starch, 2 vegetable, 1 fat	100 g (1/2 cup)	0.5 starch, 2 vegetable, 1 fat	17	3.9	4.3	122
Yakhnat Fassoulia	1,5 starch, 1 LM	100 g (1/2 cup)	1,5 starch, 1 LM	22.6	8.1	1.9	140
Yakhnat Mouloukhia	2 vegetable, 0.5 LM, 1 fat	100 g (1/2 cup)	2 vegetable, 0.5 LM, 1 fat	11.9	5.4	4.8	112

Table 16. Carbohydrate, protein, fat, energy, saturated fatty acid, monounsaturated fatty acid, polyunsaturated fatty acid, trans fat, Vitamin A, Vitamin D, Vitamin E, Vitamin C, fibre, total sugar, salt and iron daily values per serving of a traditional dish.

Dish	Serving size	Percentage of Daily Values in 2000 Kcal-diet								Percentage of Daily Values in 2000 Kcal-diet							
		CHO	Protein	Fat	Energy	SFA	MUFA	PUFA	TFA	VitA	VitD	Vit E	Vit C	Fibre	Tot S.	Salt	Iron
Baba ghanouj	100 g (6 Tbsp)	1.6	2.2	12.1	1.9	21.9	9.5	5.8	3.8	Tr	Tr	1	Tr	11	1.5	17.3	4.1
Batata mahchi	100 g (1 Large or 3 small)	6.5	10	1.5	7.1	2.8	0.8	1.9	1	Tr	Tr	Tr	Tr	6.4	0.9	20.3	6
Borgul bi banadoura	100 g (1/2 cup)	7.5	6	6.4	7.3	12.3	3.6	6.9	1	Tr	Tr	10	Tr	15	1	23.4	7.5
Chichbarak	100 g (1/2 cup)	6.8	9.6	5.9	7.7	15.9	2.3	2.5	2.4	Tr	Tr	Tr	Tr	<1.7	2.1	18.5	11.2
Falafel	40 g (2 patty balls)	5.3	10.6	6	6.7	8.96	4.8	5.4	0.7	Tr	Tr	0.3	Tr	12.4	0.8	12.4	4.6
Fatayer sabanikh	55 g (1 triangle)	5.4	5.3	7.8	8.5	6.9	5	19	0.3	Tr	Tr	0.4	Tr	4.1	0.7	19.5	14.8
Fattat Hommos	100 g (1/2 cup)	5.7	13	9	7.9	18	6.4	4.3	1.6	Tr	Tr	3.8	Tr	19.6	1.6	12.8	7
Fattoush	200 g (1 cup)	5.2	6	7.4	5.2	17.4	4.2	3.2	2	Tr	Tr	1.7	16	42.8	3.2	29.2	11.4
Foul moudamas	100 g (1/2 cup)	5.1	10.6	4.4	5.8	7.7	3.9	1.3	0.8	Tr	Tr	1.4	11.1	12.5	1.1	24.7	4
Hindbe bil zet	50 g (1/4 cup)	1	2.5	6.8	5.8	7.6	7.1	5.1	0.5	Tr	Tr	2.9	1.4	9.4	0.8	10	5.4
Hommos bi tahini	100 g (6 Tbsp)	6.2	15	8.2	7.3	14.2	6.1	6.5	1.4	Tr	Tr	Tr	Tr	20.3	1.5	16.4	5.7
Kafta wa batata	200 g (1 cup)	5.1	35.2	16.2	9.4	37.4	8.8	8.2	8.2	Tr	Tr	Tr	Tr	10	1.8	21.4	26.8
Kebba bil sayniya	76 g (half a square)	5.4	17.1	6.2	10.1	14.1	3.3	3.8	0.8	Tr	Tr	Tr	Tr	13	1.1	18	7.8
Koussa mahchi	100 g (2 Medium)	7.3	7.6	3.1	6.1	7.4	1.3	2.5	1.1	Tr	Tr	Tr	Tr	3.5	0.6	23	8
Lahm bil ajin	40 g (2 medium pieces)	5.3	8.9	4.5	4.8	5.6	2.8	9	0.4	Tr	Tr	Tr	Tr	1.4	0.9	6.2	4.5
Loubia bil zet	100 g (1/2 cup)	2.6	4.2	7.2	3.1	7.3	6.1	11.3	0.7	Tr	Tr	3.9	2.8	6.7	0.8	19.8	6.4
Malfouf mahchi	100 g (4 pieces)	4.4	7.6	2.7	3.7	5.6	1.4	2.5	0.7	Tr	Tr	Tr	Tr	4.6	1.3	31.2	7.9
Moujadara	100 g (1/2 cup)	7.9	10.8	7.4	5.6	7.4	5.8	12.7	0.8	Tr	Tr	Tr	Tr	19.2	0.9	16.2	7.6
Moghrabia	100 g (1/2 cup)	5.6	13.4	5	6.2	11	2.8	3.2	1.9	Tr	Tr	0.8	Tr	<1.7	1	12.4	5.5
Mousaka batinjan	100 g (1/2 cup)	5.3	6.4	8.4	8.2	17.1	5	6.8	1.3	Tr	Tr	1.9	6.2	12.5	1	22.5	7.2
Riz a dajaj	100 g (1/2 cup)	6.8	14.4	6.9	8.3	11	4.7	7.2	8.2	Tr	Tr	Tr	Tr	<1.7	0.5	16.2	9.1
Riz bi lahma	65 g (1/3 cup)	5.4	9.75	5.3	5.3	11.2	3.3	3.4	1.5	Tr	Tr	Tr	Tr	1.8	0.4	11.1	4.7
Sayadia	100 g (1/2 cup)	8	13	8.3	8.5	12.2	5.6	11.7	0.6	Tr	21.3	Tr	Tr	<1.7	0.3	23	6.5
Shawarma dajaj	54 g (4 Tbsp)	0.2	32	4.8	5.3	8.8	3.2	2.9	0.4	Tr	Tr	3.4	Tr	Tr	0.5	11.9	4.6
Shawarma lahma	50 g (4 Tbsp)	0.4	17.5	5.3	4.4	12.4	3.1	1.6	3.8	Tr	Tr	Tr	2.11	Tr	0.3	10.3	4.1
Tabboula	200 g (1 cup)	4.4	7.6	10.8	5.3	17.4	10.4	2.8	1	Tr	Tr	1.7	46.6	22.8	1.4	46.4	15.8
Warak enab	100 g (6 pieces)	6.4	8.8	5.1	5.1	12.3	2.3	3.1	2.2	Tr	Tr	Tr	Tr	23.9	0.7	20.8	7.3
Yakhnat Bamia	100 g (1/2 cup)	6.1	7.8	6.9	6.1	18.4	2.4	4.3	3.6	Tr	Tr	Tr	Tr	10.7	1.6	20	7.7
Yakhnat Fassoulia	100 g (1/2 cup)	8.2	16.2	5.0	7	13.3	1.9	2.5	1.9	Tr	Tr	Tr	Tr	26.4	0.6	19.4	7.1
Yakhnat Mouloukhia	100 g (1/2 cup)	4.3	10.8	5.4	5.6	12.5	2.9	3.2	2.1	Tr	Tr	Tr	Tr	7.14	0.4	20.2	6.7

Table 17. Fatty acid ratios and total fatty acids and trans fat content in 100 grams of Arabic sweets collected from an expensive pastry shop and the percentage of their daily contribution in a 2000 Kcal-diet.

Arabic sweet	In 100 g of edible portions (per gram)					Percentage of Daily Contributions in 2000 kcal-diet					Fatty Acid Ratios			
	Fat	SFA	MUFA	PUFA	TFA	Fat	SFA	MUFA	PUFA	TFA	P:S	M:S	P:M	P:M:S
Baklava mixed	21.6	12	8.5	0.9	0.11	27.6	60	19.3	4.3	4.9	0	0.7	0.1	0:0.7:1
Baklava mixed Light	20.5	10.7	8.8	0.8	0.06	26.2	53.6	20.1	3.8	2.8	0	0.8	0	0:0.8:1
Halawat El jiben	9.4	6.4	2.3	0.3	0.23	12	32.1	5.4	1.7	10.2	0	0.3	0.1	0:0.3:1
Katayef Kashta	8	3.8	3.4	0.6	0.08	10.2	19	7.8	3	3.6	0.1	0.9	0.1	0.1:0.9:1
Kounafa bi jiben	18.2	16.3	1.5	0.1	0.11	23.3	81.9	3.5	0.7	4.9	0	0	0.1	0:0:1
Maakroun	13.5	9.7	3.2	0.4	0.03	17.3	48.6	7.4	2	1.2	0	0.3	0.1	0:03:1
Maamoul tamer	20.5	14.5	5	0.7	0.14	26.2	72.7	11.5	3.2	6.5	0	0.3	0.1	0:0.3:1
Maamoul mad kashta	13.1	8.5	3.8	0.6	0.09	16.7	42.5	8.6	3.1	4.1	0	0.4	0.1	0:0.4:1
Maamoul mad joz	24	19.4	3.8	0.5	0.19	30.7	97.3	8.6	2.4	8.7	0	0.2	0.1	0:0.2:1
Maamoul joz	23.8	15.5	6.6	1.1	0.40	30.5	77.8	15.1	5.3	18.3	0	0.4	0.1	0:0.4:1
Mafrouka kashta	13.4	7.2	4.7	1.3	0.08	17.1	35.9	10.7	6.3	3.6	0.1	0.6	0.2	0.1:0.6:1
Mafrouka fostok	10.6	7.4	2.6	0.4	0.06	13.5	37.1	6.1	1.9	2.8	0	0.3	0.1	0:0.3:1
Moushabak	20.1	11.9	7.1	0.9	0.08	25.7	59.7	16.3	4.1	3.6	0	0.6	0.1	0:0.6:1
Nammoura	5.4	3.1	1.5	0.5	0.10	6.9	15.8	3.6	2.4	4.6	0.1	0.5	0.3	0.1:0.5:1
Osmaliya	23	21.3	1.3	0.1	0.14	29.4	106.8	2.9	0.8	6.2	0	0	0.1	0:0:1
Saniora	28.6	19.7	7.4	1.1	0.31	36.6	98.5	16.9	5.2	14.3	0	0.3	0.1	0:0.3:1
Sfouf	13.3	8.9	3.5	0.5	0.27	17	44.9	8	2.3	12	0	0.3	0.1	0:0.3:1

Table 18. Fatty acid ratios and total fatty acids and trans fat content in 100 grams of Arabic sweets collected from a cheap pastry shop and the percentage of their daily contribution in a 2000 Kcal-diet.

Arabic sweet	In 100 g of edible portions (per gram)					Percentage of Daily Contributions in 2000 kcal-diet					Fatty Acid Ratios			
	Fat	SFA	MUFA	PUFA	TFA	Fat	SFA	MUFA	PUFA	TFA	P:S	M:S	P:M	P:M:S
Baklava mixed	12.3	11.9	0.3	0	Tr	15.7	59.7	0.7	0.1	0	0	0	0.1	0:0:1
Barazik	25.3	12.1	10.3	2.8	Tr	32.4	60.5	23.4	13.1	Tr	0.2	0.8	0.2	0.2:0.8:1
Boundoukia	16.5	14.2	1.9	0.2	0.08	21.1	71.1	4.4	1.1	3.7	0	0.1	0.1	0:0.1:1
Daoukia	19.5	4.2	13.6	1.5	0.06	25	21.1	31	7	2.6	0.3	3.2	0.1	0.3:3.2:1
Foustoukia	14.8	10.4	4.	0.2	0.06	18.9	52.1	9.2	1.1	2.6	0	0.3	0	0:0.3:1
Ghourayba	20.4	14	4	2.2	0.08	26.1	70.1	9	10.3	3.7	0.1	0.2	0.5	0.1:0.2:1
Halawa	25.8	16.1	7.9	1.5	0.15	33	80.6	18	7.1	7	0.1	0.4	0.2	0.1:0.4:1
Halawa light	25.5	12.6	12.2	0.5	0.10	32.6	63.1	27.8	2.3	4.6	0	0.9	0	0:0.9:0
Halawat El jiben	29.9	10.1	15.8	3.5	0.39	38.3	50.8	36	15.9	17.6	0.3	1.5	0.2	0.3:1.5:1
Ish el bulbul	8.5	8.1	0.3	0	Tr	10.9	40.5	0.8	0.1	0	0	0	0.1	0:0:1
Kallaj kashta	25.1	23.6	1.2	0.1	0.05	32.1	118.4	2.8	0.5	2.2	0	0	0.1	0:0:1
Karabij joz maa crema	9.6	8.4	1	0.2	Tr	12.3	42	2.2	0.9	0	0	0.1	0.2	0:0.1:1
Katayef Kashta	18.8	15.8	2.5	0.3	0.08	24.1	79.2	5.7	1.5	3.4	0	0.1	0.1	0:0.1:1
Kounafa kashta bil kaak	5.3	4.8	0.4	0	0.04	6.7	23.9	1	0.1	1.9	0	0	0	0:0:1
Kounafa bil jiben	10	9.3	0.4	0	0.04	12.8	46.9	1.1	0.3	1.8	0	0	0.1	0:0:1
Maakaron	6.3	5.8	0.4	0	0.01	8	29	0.9	0.2	0.5	0	0	0.1	0:0:1
Maakroun wa moushabak	10.5	9	1.2	0.2	Tr	13.4	45.3	2.7	1	0	0	0.1	0.1	0:0.1:1
Maamoul tamer	13.7	5.9	7.2	0.5	Tr	17.5	29.5	16.5	2.3	0	0	1.2	0	0:1.2:1
Maamoul mad kashta	14.3	8.4	5.3	0.4	0.01	18.3	42.2	12.2	2	0.6	0	0.6	0	0:0.6:1
Maamoul mad joz	8.2	7.3	0.8	0	0.01	10.5	36.6	1.8	0.1	0.3	0	0.1	0	0:0.1:1
Maamoul fostok	14.4	12.2	2.1	0	0.01	18.4	60.9	4.8	0.3	0.6	0	0.1	0	0:0.1:1
Maamoul joz	19.1	10.5	6.1	2.2	0.13	24.4	52.6	14	10.3	6	0.2	0.5	0.3	0.2:0.5:1
Madlouka	19.2	8.6	7	3.4	Tr	24.6	43.2	16.1	15.8	0	0.4	0.8	0.4	0.4:0.8:1
Mafrouka kashta	11.5	7.2	3.7	0.4	0.07	14.7	36.2	8.5	1.8	3.1	0	0.5	0.1	0:0.5:1
Moufattaka	13.1	12.6	0.3	0	0.03	16.7	63.2	0.7	0.3	1.1	0	0	0.2	0:0:1
Mouhallabiya	20.7	2.5	8.1	10	Tr	26.5	12.5	18.4	45.7	0	4	3.2	1.2	4:3.2:1
Nammoura	4	3.7	0.1	0	0.02	5.1	18.9	0.3	0.2	0.9	0	0	0.2	0:0:1
Osmaliya	6.4	4.8	1.3	0	0.07	8.2	24.2	3.1	0.4	3.2	0	0.2	0	0:0.2:1
Riz bil halib	9.5	7.3	1.5	0.5	0.04	12.1	36.9	3.5	2.3	1.7	0	0.2	0.3	0:0.2:1
Saniora	4.4	4.1	0.2	0	Tr	5.6	20.5	0.6	Tr	Tr	0	0	0	0:0:1
Sfouf	19	13.6	4.9	0.2	0.23	24.3	68.1	11.1	1	10.3	0	0.3	0	0:0.3:1
Shaaybiyat	11.6	7.4	3.5	0.4	0.10	14.8	37.3	8	2.1	4.7	0	0.4	0.1	0:0.4:1
Ward el sham	16.1	8.7	6	1.3	Tr	20.6	43.5	13.7	6	0	0.1	0.7	0.2	0.1:0.7:1
Znoud El sitt	14.2	13	1	0	0.07	18.2	65.3	2.3	0	3.2	0	0	0	0:0:1

Table 19. Fatty acid ratio and total fatty acids mean value in 100 grams of Arabic sweets collected from cheap and expensive pastry shops and the percentage of their daily contribution in a 2000 kcal-diet.

Arabic sweet	In 100 g of edible portions (per gram)					Percentage of Daily Contributions in 2000 kcal-diet					Fatty Acid Ratios			
	Fat	SFA	MUFA	PUFA	TFA	Fat	SFA	MUFA	PUFA	TFA	P:S	M:S	P:M	P:M:S
Baklava mixed	23.4	12	9.4	1.9	0.05	30	92.8	21.4	8.7	2.4	0.1	0.7	0.2	0.1:0.7:1
Halawat El Jiben	8.9	7.2	1.3	0.2	0.11	11.4	55.8	3.1	0.9	5.1	0	0.1	0.1	0:0.1:1
Katayef Kashta	6.6	4.3	1.9	0.3	0.06	8.5	33	4.4	1.5	2.7	0	0.4	0.1	0:0.4:1
Kounafa bil jiben	12.2	11.1	0.9	0.1	0.06	15.7	85.3	2.2	0.4	2.7	0	0	0.1	0:0:1
Maakroun	12	9.4	2.2	0.3	0.01	15.3	72.3	5	1.5	0.6	0	0.2	0.1	0:0.2:1
Maamoul tamer	17.4	11.5	5.2	0.5	0.08	22.3	88.4	11.8	2.6	3.5	0	0.4	0.1	0:0.4:1
Maamoul mad kashta	10.6	7.9	2.3	0.3	0.05	13.6	60.9	5.2	1.6	2.2	0	0.2	0.1	0:0.2:1
Maamoul mad joz	19.2	15.8	2.9	0.3	0.10	24.6	121.7	6.7	1.3	4.6	0	0.1	0.1	0:0.1:1
Maamoul joz	21.5	12.1	6.8	2.3	0.20	27.5	93.1	15.6	10.5	9.2	0.1	0.5	0.3	0.1:0.5:1
Mafrouka kashta	13.2	9.9	2.5	0.7	0.05	16.9	76.3	5.7	3.3	2.4	0	0.2	0.2	0:0.2:1
Nammoura	5.9	4	1.4	0.3	0.09	7.5	30.8	3.3	1.4	3.9	0	0.3	0.2	0:0.3:1
Osmaliya	16.2	14.3	1.4	0.3	0.09	20.8	110.6	3.2	1.5	4	0	0.1	0.2	0:0.1:1
Saniora	23.8	16.6	6.1	0.6	0.27	30.5	128.1	14	3.1	12.3	0	0.3	0.1	0:0.3:1
Sfouf	12.4	8.2	3.5	0.5	0.19	15.9	63.3	8	2.2	8.4	0	0.4	0.1	0:0.4:1
Osmaliya	23	21.3	1.3	0.1	0.14	29.4	106.8	2.9	0.8	6.2	0	0	0.1	0:0:1
Saniora	28.6	19.7	7.4	1.1	0.31	36.6	98.5	16.9	5.2	14.3	0	0.3	0.1	0:0.3:1
Sfouf	13.3	8.9	3.5	0.5	0.27	17	44.9	8	2.3	12	0	0.3	0.1	0:0.3:1

Table 20. Carbohydrate, fat, protein, ash, moisture and energy content of Arabic sweets and the percentage of their daily contribution in a 2000 Kcal-diet.

Arabic sweet	Amounts In 100 g of edible portions (per gram)						Percentage of Daily Contributions in 2000 Kcal-diet			
	Moisture	Ash	CHO	Protein	Fat	Energy	CHO	Protein	Fat	Energy
Baklava mixed	7	1.1	64	6.6	27.3	474	23.2	13.2	28	23.7
Baklava mixed light	7.6	1	61.9	7.1	28.7	478	22.5	14.2	29.4	23.9
Barazik	1.5	1.3	49	15.3	42.1	553	17.8	30.6	43.2	27.7
Boundoukia	4.8	1.5	64.1	11.5	23.2	465	23.3	23	23.8	23.3
Daoukia	27.4	0.7	52.8	7.3	15.1	347	19.2	14.6	15.5	17.4
Foustoukia	4.8	1.8	59.7	19.2	18.5	446	21.7	38.4	19	22.3
Ghourayba	4.2	0.4	62.9	6.8	32.9	510	22.8	13.6	33.8	25.5
Halawa	3.8	1.7	45.7	16.8	41	538	16.6	33.6	42.1	26.9
Halawa light	0.7	1.4	57.5	12.6	35.6	531	20.9	25.2	36.5	26.6
Halawat El Jiben	45.4	1.3	36.7	9.7	8.8	248	13.3	19.4	9	12.4
Ish el bulbul	5.2	1	65.8	7.5	26.2	478	23.9	15	26.9	23.9
Kallaj kashta	55	0.8	33	3.6	9.7	215	12	7.2	10	10.8
Karabij joz maa crema	17.8	0.6	61.1	7.6	16.5	391	22.2	15.2	16.9	19.6
Katayef Kashta	44.5	0.8	40.5	6	10.5	260	14.7	12	10.7	13
Kounafa kashta bil kaak	42	0.9	42.2	8.1	8.7	262	15.3	16.2	8.9	13.1
Kounafa bil jiben	42.6	0.6	40.4	6.1	13.2	279	14.6	12.2	13.5	14
Maakaron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Maakroun wa moushabak	5.2	0.2	77.1	3.5	17.9	448	28	7	18.4	22.4
Maamoul tamer	11.8	1	68.4	6.6	15.6	410	24.8	13.2	16	20.5
Maamoul mad Kashta	37.2	0.9	49.6	5.3	8.9	283	18	10.6	9.2	14.2
Maamoul mad joz	12.9	0.8	58.8	8	25	443	21.3	16	25.6	22.2
Maamoul fostok	14.5	0.8	53.3	10.4	26.9	444	19.3	20.8	27.6	22.2
Maamoul joz	8.9	0.6	66.2	10	18.3	433	24	20	18.8	21.7
Madlouka	29.36	1.1	51.1	8	13	328	18.5	16	13.4	16.4
Mafrouka Kashta	10.1	0.8	71.1	4.3	17.5	425	25.8	8.6	18	21.3
Mafrouka fostok	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moufattaka	26.3	0.7	59.2	5.9	10.1	332	21.5	11.8	10.3	16.6
Mouhallabiya	55.4	1.1	31.6	6.2	7.3	203	11.4	12.4	7.5	10.2
Moushabak	13.5	<0.1	71.5	2.1	16.4	410	26	4.2	16.8	20.5
Nammoura	14.3	0.4	75.4	3	8.8	376	27.4	6	9	18.8
Osmaliya	48.4	1.3	27	9.3	17.9	271	9.8	18.6	18.4	13.6
Riz bil Halib	54.2	1.3	32.7	6.7	6.5	204	11.8	13.4	6.7	10.2
Saniora	2.3	1	68.7	7.4	26.4	490	24.9	14.8	27.1	24.5
Sfouf	20.6	0.7	55.2	6.3	22	401	20	12.6	22.6	20.1
Shaaybiyat	39.4	0.5	39.1	9.5	14.7	298	14.2	19	15.1	14.9
Ward el sham	46.9	1.2	34.4	8.2	11.9	254	12.5	16.4	12.2	12.7
Znoud El Sitt	40.3	0.3	41	4.5	17.8	307	14.9	9	18.2	15.4

Table 21. Fibre, Vitamin A, Vitamin D, Vitamin E, Vitamin C content of Arabic sweets and the percentage of their daily contribution in 2000 Kcal-diet.

Arabic sweet	In 100 g of edible portions (per gram)				Percentage of Daily Contributions in 2000 Kcal-diet			
	Fibre	Vit A	Vit E	Vit C	Fibre	Vit A	Vit E	Vit C
Baklava mixed	11.8	8.1	1	2	42.1	0.9	6.6	2.2
Baklava mixed light	11.9	13	1.2	Tr	42.5	1.4	8	Tr
Barazik	4.1	Tr	Tr	8	14.6	Tr	Tr	8.8
Boundoukia	7.4	Tr	4.7	1	26.4	Tr	31.3	1.1
Daoukia	8.8	Tr	Tr	2	31.4	Tr	Tr	2.2
Foustoukia	8.6	Tr	1.3	Tr	30.7	Tr	8.6	Tr
Ghourayba	2.1	Tr	Tr	Tr	7.5	Tr	Tr	Tr
Halawa	3.9	Tr	Tr	Tr	13.9	Tr	Tr	Tr
Halawa light	3.4	Tr	Tr	Tr	12.1	Tr	Tr	Tr
Halawat El jiben	6.8	Tr	Tr	2	24.2	Tr	Tr	2.2
Ish el bulbul	10	8.4	0.1	3	35.7	0.9	0.7	3.3
Kallaj kashta	4.6	Tr	Tr	Tr	16.4	Tr	Tr	Tr
Karabij joz maa crema	4	15.7	Tr	Tr	14.2	1.7	Tr	Tr
Katayef Kashta	1.9	Tr	Tr	Tr	6.7	Tr	Tr	Tr
Kounafa kashta bil kaak	3.1	Tr	Tr	Tr	11	Tr	Tr	Tr
Kounafa bil jiben	3.1	Tr	Tr	Tr	11	Tr	Tr	Tr
Maakaron	NA	NA	NA	NA	NA	Tr	Tr	Tr
Maakroun wa moushabak	1.5	Tr	Tr	Tr	5.3	Tr	Tr	Tr
Maamoul tamer	7	Tr	Tr	1.4	25	Tr	Tr	1.5
Maamoul mad kashta	8.8	Tr	Tr	Tr	31.4	Tr	Tr	Tr
Maamoul mad joz	3.9	13.4	2	2	13.9	1.4	13.3	2.2
Maamoul fostok	6.2	12.7	Tr	Tr	22.1	1.4	Tr	Tr
Maamoul joz	7.5	8.9	Tr	Tr	26.7	0.9	Tr	Tr
Madlouka	5.2	Tr	Tr	Tr	18.5	Tr	Tr	Tr
Mafrouka kashta	2.8	Tr	Tr	Tr	10	Tr	Tr	Tr
Mafrouka fostok	NA	NA	NA	NA	NA	Tr	Tr	Tr
Moufattaka	3	Tr	Tr	2	10.7	Tr	Tr	2.2
Mouhallabiya	1.2	Tr	Tr	Tr	4.2	Tr	Tr	Tr
Moushabak	0.8	Tr	Tr	<0.1	2.8	Tr	Tr	Tr
Nammoura	8.4	Tr	Tr	<1	30	Tr	Tr	Tr
Osmaliya	2.5	Tr	Tr	<1	8.9	Tr	Tr	Tr
Riz bil halib	Tr	Tr	Tr	<1	Tr	Tr	Tr	Tr
Saniora	1.8	Tr	Tr	<1	6.4	Tr	Tr	Tr
Sfouf	2.5	Tr	Tr	<1	8.9	Tr	Tr	Tr
Shaaybiyat	1	Tr	Tr	<1	3.5	Tr	Tr	Tr
Ward el sham	2.3	Tr	Tr	<1	8.2	Tr	Tr	Tr
Znoud El sitt	2	Tr	Tr	<1	7.1	Tr	Tr	Tr

Table 22. Exchange list for commonly consumed Arabic sweets.

Arabic sweet	Exchanges per 100 g	Serving Size (g)	Exchange per serving size	Amounts per Serving per gram and Kcal			
				CHO	Protein	Fat	Energy
Baklava mixed	3 starch, 1 sugar, 4 fat	23	1 starch, 1 fat	14.7	1.51	4.8	109
Baklava mixed Light	3,25 starch, 4 fat, 0.5 sugar	24	1 starch, 1 fat	14.8	1.7	5.3	114
Barazik	3 starch, 1 LM, 6 fat	30	1 starch, 2 fat	14.7	4.5	9.8	165
Boundoukia	3 starch,1 LM, 3 fat, 1 sugar	23	1 starch, 1 fat	14.7	2.6	4.1	106
Daoukia	2.5 starch, 1 RFM, 1 fat	28	1 starch, 0.5 fat	14.7	2	3.3	97
Foustoukia	4 starch, 1 LM, 2 fat	25	1 starch, 1 fat	14.9	4.8	3.6	111
Ghourayba	3 starch, 1 sugar, 5 fat	24	1 starch, 1 fat	15	1.6	6.1	117
Halawa	3 starch, 1 LM, 6 fat	33	1 starch, 2 fat	15	5.5	10.5	172
Halawa Light	4 starch, 5 fat	26	1 starch, 1,5 fat	14.9	3.2	7.2	138
Halawat El Jiben	1 starch, 1 RFM, 1 sugar	41	1 starch, 0.25RFM	15	3.9	2.8	99
Ish el bulbul	3 starch, 1 sugar, 4 fat	23	1 starch, 0.5 fat	15.1	1.7	4.7	105
Kallaj kashta	2 starch, 1.5 fat	45	1 starch, 0.5 fat	14.8	1.6	3.4	96
Karabij joz maa crema	4 starch, 1 LM, 1 fat	24	1 starch, 0.5 fat	14.6	1.8	3	93
Katayef kashta	2 starch, 1 HFM	37	1 starch, 0.5 fat	14.9	2.2	3	96
Kounafa kashta bil kaak	1.75 starch, 1 RFM	35	1 starch, 0.25 fat	14.7	2.8	2.3	91
Kounafa bil jiben	2 starch, 1 MFM, 1 fat	37	1 starch, 0.5 fat	14.9	2.2	3.8	103
Maakaron	NA	NA	NA	NA	NA	NA	NA
Maakroun wa moushabak	3 starch, 2 fat, 2 sugar	19	1 starch	14.6	0.6	2.6	85
Maamoul tamer	3 starch, 2 fat, 1 sugar	22	1 starch, 0.5 fat	15	1.4	2.6	90
Maamoul mad kashta	3 starch, 1 fat	30	1 starch	14.8	1.5	2.1	85
Maamoul mad joz	2,5 starch, 1 sugar, 4 fat	25	1 starch, 1 fat	14.7	2	4.8	110
Maamoul fostok	3,5 starch, 4 fat	28	1 starch, 1 fat	14.9	2.9	5.8	124
Maamoul joz	3 starch, 2.5 fat, 1 sugar	22	1 starch, 0.5 fat	14.5	2.2	3.1	95
Madlouka	2.25 starch, 1 WM	29	1 starch, 0.5 fat	14.8	2.3	2.9	95
Mafrouka Kashta	3,5 starch, 1 sugar, 2 fat	21	1 starch	14.9	0.9	2.8	89
Mafrouka fostok	NA	NA	NA	NA	NA	NA	NA
Moufattaka	2 starch, 2 sugar, 1 fat	25	1 starch	14.8	1.4	1.9	83
Mouhallabiya	1 other CHO, 1 RFM, 0.5 sugar	47	1 other-CHO, 0.25 RFM	14.8	2.9	2.6	95
Moushabak	2.5 starch, 2 fat, 2 sugar	21	1 starch	15	0.4	2.6	82
Nammoura	3 starch, 0.25 fat, 2 sugar	20	1 starch	15	0.6	1.3	75
Osmaliya	1 starch, 1 WM, 1 fat	55	1 starch, 1 fat	14.8	5.1	7.7	149
Riz bil halib	1 other-CHO, 1 RFM, 0.5 sugar	46	1 other-CHO, 0.25 RFM	15	3	2.3	92
Saniora	3 starch, 1,25 sugar, 4 fat	22	1 starch, 1 fat	15.1	1.6	4.5	107
Sfouf	3,25 starch, 3 fat	27	1 starch, 1 fat	14.9	1.7	4.6	108
Shaaybiyat	1.5 starch, 1 RFM, 1,5 fat	38	1 starch, 0.5 RFM	14.8	3.6	4.3	113
Ward el sham	1.25 starch, 1 WM	44	1 starch, 0.5 fat	15.1	3.6	4	109
Znoud El Sitt	2,5 starch, 2.5 fat	36	1 starch, 1 fat	14.7	1.6	5	110

Table 23. Carbohydrate, protein, fat, energy, saturated fatty acid, monounsaturated fatty acid, polyunsaturated fatty acid, trans fat, vitamin A, vitamin D, vitamin E, vitamin C, fibre, total sugar, salt and iron daily values per serving of an Arabic sweet.

Arabic sweet	Serving size (g)	Daily Values in 2000 Kcal-diet								Amounts per Serving in g			
		Vit A	Vit E	Vit C	Fibre	Vit A	Vit E	Vit A	Vit E	Vit C	Fibre	Vit A	Vit E
Baklava mixed	23	5.3	3	6.2	5.4	9.6	0.2	1.5	0.5	2.7	1.8	0.2	0.4
Baklava mixed Light	24	5.4	3.4	6.8	5.7	10.2	0.3	1.9	Tr	2.8	3.1	0.2	Tr
Barazik	30	5.3	9.1	12.6	8.2	4.3	Tr	Tr	2.6	1.2	Tr	Tr	2.4
Boundoukia	23	5.3	5.2	5.3	5.3	6	Tr	7.21	0.2	1.7	Tr	1	0.2
Daoukia	28	5.3	4	4.2	4.8	8.8	Tr	Tr	0.6	2.4	Tr	Tr	0.5
Foustoukia	25	5.4	9.6	4.6	5.5	7.6	Tr	2.1	Tr	2.1	Tr	0.3	Tr
Ghourayba	24	5.4	3.2	7.9	5.8	1.8	Tr	Tr	Tr	0.5	Tr	Tr	Tr
Halawa	33	5.4	11	13.5	8.6	4.6	Tr	Tr	Tr	1.2	Tr	Tr	Tr
Halawa Light	26	5.4	6.5	9.2	6.9	3.1	Tr	Tr	Tr	0.8	Tr	Tr	Tr
Halawat El Jiben	41	5.4	7.9	3.6	4.9	9.9	Tr	Tr	0.9	2.7	Tr	Tr	0.8
Ish el bulbul	23	5.5	3.4	6	5.2	8.2	0.2	0.1	0.7	2.3	1.9	Tr	0.6
Kallaj kashta	45	5.4	3.2	4.3	4.8	7.3	Tr	Tr	Tr	2	Tr	Tr	Tr
Karabij joz maa crema	24	5.3	3.6	3.9	4.6	3.4	0.4	Tr	Tr	0.9	3.7	Tr	Tr
Katayef kashta	37	5.4	4.4	3.8	4.8	2.5	Tr	Tr	Tr	0.7	Tr	Tr	Tr
Kounafa kashta bil kaak	35	5.3	5.6	3	4.5	3.8	Tr	Tr	Tr	1	Tr	Tr	Tr
Kounafa bil jiben	37	5.4	4.5	4.8	5.1	4.1	Tr	Tr	Tr	1.1	Tr	Tr	Tr
Maakaron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Maakroun wa moushabak	19	5.3	1.3	3.4	4.2	1	Tr	Tr	Tr	0.2	Tr	Tr	Tr
Maamoul tamer	22	5.4	2.9	3.4	4.5	5.5	Tr	Tr	0.3	1.5	Tr	Tr	0.3
Maamoul mad kashta	30	5.4	3.1	2.6	4.2	9.4	Tr	Tr	Tr	2.6	Tr	Tr	Tr
Maamoul mad joz	25	5.3	4	6.2	5.5	3.4	0.3	3.3	0.5	0.9	3.3	0.5	0.5
Maamoul fostok	28	5.4	5.8	7.5	6.2	6.2	0.4	Tr	Tr	1.7	3.5	Tr	Tr
Maamoul joz	22	5.3	4.4	4	4.7	5.8	0.2	Tr	Tr	1.6	1.9	Tr	Tr
Madlouka	29	5.3	4.6	3.7	4.7	5.3	Tr	Tr	Tr	1.5	Tr	Tr	Tr
Mafrouka kashta	21	5.4	1.8	3.6	4.4	2.1	Tr	Tr	Tr	0.5	Tr	Tr	Tr
Mafrouka fostok	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moufattaka	25	5.3	2.9	2.5	4.1	2.6	Tr	Tr	0.5	0.7	Tr	Tr	0.5
Mouhallabiya	47	5.4	5.8	3.4	4.7	2	Tr	Tr	Tr	0.5	Tr	Tr	Tr
Moushabak	21	5.4	0.8	3.4	4.1	0.6	Tr	Tr	Tr	0.1	Tr	Tr	Tr
Nammoura	20	5.4	1.2	1.7	3.7	6	Tr	Tr	Tr	1.6	Tr	Tr	Tr
Osmaliya	55	5.4	10.2	9.8	7.4	4.9	Tr	Tr	Tr	1.3	Tr	Tr	Tr
Riz bil halib	46	5.4	6.1	3	4.6	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr
Saniora	22	5.5	3.2	5.8	5.3	1.4	Tr	Tr	Tr	0.3	Tr	Tr	Tr
Sfouf	27	5.4	3.4	5.9	5.4	2.4	Tr	Tr	Tr	0.6	Tr	Tr	Tr
Shaaybiyat	38	5.4	7.2	5.6	5.6	1.3	Tr	Tr	Tr	0.3	Tr	Tr	Tr
Ward el sham	44	5.5	7.2	5.2	5.4	3.6	Tr	Tr	Tr	1	Tr	Tr	Tr
Znoud El Sitt	36	5.3	3.2	6.4	5.5	2.5	Tr	Tr	Tr	0.7	Tr	Tr	Tr

Table 24. Fatty acid ratios and total fatty acids and trans- fats content in 100 grams of a market food product and the percentage of their daily contribution in a 2000 Kcal-diet.

Product	In 100 g of edible portions (per gram)					Daily Contributions in 2000 Kcal-diet					Fatty acid Ratios			
	Fat	SFA	MUFA	PUFA	TFA	Fat	SFA	MUFA	PUFA	TFA	P:S	M:S	P:M	P:M:S
Arabic Bread-White	2.3	0.6	0.4	1.2	Tr	2.9	3.2	0.9	5.5	Tr	1.8	0.6	2.8	1.8:0.6:1
Arabic Bread-Whole wheat	4	1.3	0.5	2.1	Tr	5.1	6.9	1.1	9.6	Tr	1.5	0.3	4.2	1.5:0.3:1
Baguette	0.5	0.1	Tr	0.2	Tr	0.6	0.7	0.1	1.2	Tr	1.7	0.4	4.3	1.7:0.4:1
Biscuits Chocolate Quinoa	13.4	1.8	9.6	1.9	0.01	17.1	8.9	21.9	8.7	0.61	1	5.3	0.2	1:5.3:1
Biscuits Digestive	17.1	15.6	1	0.3	0.05	21.9	78.2	2.3	1.7	2.33	0	0	0.3	0:0:1
Biscuits Digestive Light	13.8	12.2	0.7	0.7	0.04	17.6	61	1.7	3.5	1.88	0	0	1	0:0:1
Biscuits with cream	15.5	7.8	6	1.6	Tr	19.8	39	13.6	7.6	Tr	0.2	0.7	0.2	0.2:0.7:1
Breakfast Cereals	2.1	0.9	0.8	0.3	Tr	2.6	4.8	1.8	1.4	Tr	0.3	0.8	0.3	0.3:0.8:1
Breakfast Cereals-Chocolate	2.4	2.1	0.2	Tr	0.01	3	10.5	0.4	0.3	0.44	0	0.1	0.4	0:0.1:1
Butter	81.4	56.4	23	1.4	0.49	104.3	282	52.3	6.6	22.20	0	0.4	0	0:0.4:1
Butter Light	61.5	43.4	16.4	1.1	0.49	78.8	217.4	37.3	5	22.36	0	0.3	0	0:0.3:1
Cake with Cream	16.1	14.2	1.4	0.3	Tr	20.6	71.3	3.3	1.6	Tr	0.	0.1	0.2	0:0.1:1
Chocolate Dark	33.6	33.1	0.4	Tr	Tr	43	165.6	0.9	0.1	Tr	0	0	0	0:0:1.0
Chocolate Milk-1	36.6	36.1	0.4	Tr	0.04	46.9	180.6	1	Tr	1.66	Tr	0	Tr	0:0:1.0
Chocolate Milk-2	35	34.7	0.2	Tr	Tr	44.8	173.6	0.5	0.1	Tr	0	0	0.1	0:0:1.0
Corn Oil	100	10.3	31	58.7	Tr	128.2	51.5	70.4	266.8	Tr	5.7	3	1.8	5.7:3:1
Croissant Zaatar-1	16.1	15.1	0.8	0.1	0.02	20.6	75.9	1.8	0.4	0.73	0	0	0.1	0:0:1
Croissant zaatar-2	22.5	15.1	5.4	1.7	0.16	28.8	75.7	12.4	7.7	7.16	0.1	0.3	0.3	0.1:0.3:1
Doughnuts	19.6	12.8	6	0.6	0.10	25.1	64.3	13.6	2.7	4.45	0	0.4	0.1	0:0.4:1
English Cake-Chocolate	18.6	9.17	6.4	2.4	0.48	23.8	45.8	14.7	11.1	21.98	0.2	0.7	0.3	0.2:0.7:1
Hot Chocolate Powder	5.4	3.5	1.7	0.1	0.02	6.9	17.5	3.8	0.8	0.74	0	0.4	0.1	0:0.4:1
Instant Coffee	10.8	10.6	0.1	Tr	0.02	13.8	53.3	0.2	0.1	0.98	0	0	0.2	0:0:1
Kaak Asrouni	1.5	0.2	0.5	0.7	Tr	1.9	1.1	1.1	3.4	Tr	3.2	2.1	1.5	3.2:2.1:1
Kaak Debes and Cacao	11.9	5.5	4.9	1.3	0.04	15.2	27.9	11.2	6	1.62	0.2	0.8	0.2	0.2:0.8:1
Kaak Korshalli	6.9	3.1	2.4	1.3	0.03	8.8	15.6	5.5	5.9	1.57	0.4	0.7	0.5	0.4:0.7:1
Olive Oil	100	14.9	74.3	10.8	Tr	128.2	74.5	168.8	49	Tr	0.7	4.9	0.1	0.7:4.9:1
Pain au Lait	3.8	1.9	0.9	0.8	0.10	4.8	9.8	2	3.7	4.6	0.4	0.4	0.9	0.4:0.4:1
Petit Fours-1	25.6	15.9	8.4	1.2	0.05	32.8	79.4	19	5.7	2.3	0	0.5	0.1	0:0.5:1
Petit Fours-2	29.6	26.7	2.6	0.1	0.06	37.9	133.9	5.9	0.5	2.6	0	0.1	0	0:0.1:1
Potato Chips-1	29.9	20.2	9.5	0.1	0.03	38.3	101.2	21.6	0.5	1.3	0	0.4	0	0:0.4:1
Potato Chips-2	15.4	6.5	7.9	0.9	0.05	19.7	32.4	17.9	4.3	2.1	0.1	1.2	0.1	0.1:1.2:1
Potato Chips Light-1	26.9	18.3	8.4	Tr	0.03	34.4	91.8	19.2	0.2	1.2	0	0.4	0	0:0.4:1
Potato Chips light-2	22.9	15	6.9	0.8	0.07	29.3	75.2	15.8	3.7	3.1	0	0.4	0.1	0:0.4:1
Sunflower Oil	100	7.6	29.8	62.6	Tr	128.2	38	67.7	284.5	Tr	8.2	3.9	2.1	8.2:3.9:1
Tahina	59.4	17.1	30	12.2	0.06	76.1	85.5	68.1	55.6	2.7	0.7	1.7	0.4	0.7:1.7:1
Tuna Packed in Oil	6.8	3.2	2	1.4	0.02	8.7	16.3	4.6	6.6	0.9	0.4	0.6	0.7	0.4:0.6:1
Tuna Packed in Water	0.5	0.2	0.2	Tr	Tr	0.6	1.2	0.5	0.1	0.1	0.1	0.9	0.1	0.1:0.9:1
Vegetable Margarine	99	46.7	27.4	24.8	Tr	126.9	233.6	62.3	112.9	Tr	0.5	0.5	0.9	0.5:0.5:1
Wafer-Chocolate-1	21.7	19.6	1.4	0.5	Tr	27.8	98.4	3.2	2.6	Tr	0	0	0.4	0:0:1
Wafer-Chocolate-2	24.2	19.1	2.4	1	1.57	31	95.5	5.5	4.8	71.5	0	0.1	0.4	0:0.1:1

Table 25. Fatty acid ratios and total fatty acids and trans- fats content in 100 grams of coffee and nuts and the percentage of their daily contribution in a 2000 Kcal-diet.

Product	In 100 g of edible portions					Percentage of Daily Contribution in 2000 Kcal-diet					Fatty Acids Ratios			
	Fat	SFA	MUFA	PUFA	TFA	Fat	SFA	MUFA	PUFA	TFA	P:S	M:S	P:M	P:M:S
Coffee with cardamom	16.8	14	2.1	0.5	0.05	21.5	70.3	4.7	2.6	2.2	0	0.1	0.2	0:0.1:1
Coffee without cardamom	17.7	12.9	2.5	2.1	0.04	22.6	64.6	5.8	9.8	1.6	0.1	0.2	0.8	0.1:0.2:1
Mixed Nuts	25.7	13.1	10.1	2.3	0.08	32.9	65.9	23	10.5	3.5	0.1	0.7	0.2	0.1:0.7:1
Mixed Kernels	53.6	10.9	39.4	3.1	Tr	68.7	54.9	89.6	14.3	Tr	0.2	3.5	0	0.2:3.5:1
De-hulled pumpkin seeds	50.6	34	15.4	0.8	0.30	64.8	170.2	35	3.6	13.8	0	0.4	0	0:0.4:1
De-hulled sunflower seeds	52.5	26.7	19.1	6.3	0.37	67.3	133.6	43.4	28.6	16.7	0.2	0.7	0.3	0.2:0.7:1

Table 26. Comparison between actual nutrient analysis values of market food products and reported nutrient values on nutrition facts label.

Product	Fat		SFA		MUFA		PUFA		TFA	
	Chem-R	N.label	Chem-R	N.label	Chem-R	N.label	Chem-R	N.label	Chem-R	N.label
Biscuits Chocolate Quinoa	13.4	5	1.8	Tr	9.6	NA	1.9	NA	Tr	0
Biscuits Digestive	17.1	26	15.6	15	1	NA	0.3	NA	Tr	0
Biscuits Digestive Light	13.8	13.5	12.2	13.5	0.7	NA	0.7	NA	Tr	0
Breakfast Cereals	2.1	0.4	0.9	0.1	0.8	0.1	0.3	0.2	Tr	0
Breakfast Cereals-Chocolate	2.4	5.2	2.1	5.2	0.2	NA	0	NA	Tr	0
Butter	81.4	80	56.4	54	23	NA	1.4	NA	0.4	6.6
Butter Light	61.5	20	43.4	53.3	16.4	NA	1.1	NA	0.4	0
Chocolate Wafers	21.7	25	19.6	21	1.4	NA	0.5	NA	Tr	0
Chocolate wafers-brand 2	24.2	27.27	19.1	9	2.4	NA	1	NA	1.5	4.5
Chocolate with milk	36.6	73	36.1	46	0.4	NA	Tr	NA	0	NA
Chocolate-Dark	33.6	40	33.1	23.3	0.4	NA	Tr	NA	Tr	0
Chocolate-White	35	NA	34.7	NA	0.2	NA	Tr	NA	Tr	NA
Corn Oil	100	100	10.3	14	31	24	58.7	61	Tr	0
Cream Filled Biscuits	15.5	18.6	7.8	4.6	6	NA	1.6	NA	Tr	NA
Hot Chocolate Powder	5.4	5.9	3.5	3.7	1.7	NA	0.1	NA	Tr	NA
Instant Coffee (3 in 1)	10.8	9.09	10.6	9	0.1	NA	0	NA	Tr	NA
Chips Baked	22.9	22	15	6	6.9	NA	0.8	NA	Tr	0
Lays Chips Cheese	15.4	12	6.5	3	7.9	NA	0.9	NA	Tr	0
Olive Oil	100	100	14.9	24	74.3	87	10.8	22	Tr	0
Potato Chips	29.9	26.6	20.2	10	9.5	10	0.1	3.3	Tr	NA
Potato Chips Light	26.9	20	18.3	6.6	8.4	6.6	Tr	NA	Tr	0
Sunflower Oil	100	100	7.6	10	29.8	20	62.6	60	Tr	0
Tahina	59.4	60	17.1	10	30	NA	12.2	NA	Tr	0
Tuna Packed in Oil	6.8	26.6	3.2	NA	2	NA	1.4	NA	Tr	NA
Tuna Packed in Water	0.5	3	0.2	NA	0.2	NA	Tr	NA	Tr	NA
Vegetable Margarine	>99	56.4	46.7	9.5	27.4	19	24.8	23	Tr	NA

Discussion ___

This section highlights and discusses the main findings of the analysis of traditional dishes, Arabic sweets, and market foods.

Comparison between traditional dishes from Mount Lebanon, Beqaa, Beirut, Tripoli and Saida: total sugars, salt, iron, total fat, fatty acid profile, and fatty acid ratios

Total sugars

The total sugar content of the majority of traditional dishes from the different governorates was less than 3 grams per 100 grams of the food sample. A higher total sugar content was present in *Hindbe bil zeit* from Mount Lebanon, *Yakhnat Bamiah* from Beqaa, *Lahem bil ajin* from Beirut, Beqaa, Tripoli and Saida, and in *Falafel* from Mount Lebanon and Saida. The highest percentage of total sugar was observed in *Lahem bi ajin* and *Falafel* (Table 8). This might suggest traditional dishes prepared from carbohydrate sources have a higher sugar content as compared to vegetarian dishes.

Salt

A high sodium chloride (NaCl) or salt content was observed in most dishes as Daily Value for NaCl exceeded 20% in more than half of the traditional dishes collected from the different governorates (Table 16). The highest amount of NaCl between the dishes was observed in *Malfouf mahchi* from Mount Lebanon and Saida, *Foul moudamas* from Beqaa, Falafel from Beirut and *Fatayir sabanikh* from Tripoli (Table 1-6). *Fatayir sabanikh* had the highest mean amount in NaCl across the governorates (Table 8). Findings suggest that the practice of adding salt to foods during preparation is prevalent in all the governorates. Reducing salt content of traditional dishes can be achieved through different key strategies such as policy interventions, consumer awareness and empowerment on the need to reduce salt intake, improving availability and accessibility of low-salt products, etc.

Iron

Meat based dishes contained higher levels of iron compared with non-meat based traditional dishes. For instance, *Chichbarak* and *kafta wa batata* from Mount Lebanon contained ≥2.5 milligrams iron per 100 grams of the food sample. Across all governorates, the highest iron content (≥4.5 milligrams/100grams) was present in *Fatayir sabanikh* (Table 1-6) and the highest mean level of iron was in *Fatayer sabanikh* and *Kafta wa batata* (Table 8). More than 60% of the dishes were found to be deficient in iron (<10% of the DV of iron). This could indicate the lack of iron fortification of staple foods at the national level and raises the need to increase initially fortification of foods and increase awareness on the importance of consuming iron rich foods and supplementing iron to high risk groups if needed. This is in addition to improving knowledge on how to increase bioaccessibility and bioavailability of iron (e.g. adding lemon juice, etc.).

Total fat

In total, around 23% of samples contained a low amount of total fat. The highest mean value of total fat was observed in *Falafel* (Tables 11-12). The highest percentage of total fat was observed in *Fatayer sabanikh* samples obtained from Beqaa and Beirut, *Falafel* from Mount Lebanon, *Lahem bi ajin* from Tripoli, and in *Hindbeh bil zeit* from Saida (Tables 1-6). The variability in the foods high in fat from the different governorates may be related to the cultural cooking practices and fat content of the meat sources. More than 50% of the dishes from Mount Lebanon were considered as poor sources of total fat (<5% DV) and the remaining dishes contained medium amounts (range between 10% DV and 20% DV). In comparison with dishes from Beqaa, only 3% of dishes at Mount Lebanon contained high amount of total fat (>20% DV). Similarly, 18 dishes out of 30 cooked at Beirut contained medium amount of total fat. On the other hand, only 3 dishes among the meals cooked in Tripoli contained high amount of total fat. Furthermore, only one dish from Saida contained high amount of total fat and the majority contained medium amounts (Tables 1-6; Tables 11-12).

Saturated fat

The highest amount of saturated fatty acids (SFA) were observed in *Shawarma lahma* from Saida and Mount Lebanon, in *Fatet hommos* from Beqaa, in *Mosaka batenjan* from Beirut, and in *Kebba bil sayniya* from Tripoli (Table 1-6). The highest mean values of SFA were present in *Shawarma lahma* (Tables 11-12). More than 90% of the dishes obtained from the different governorates contained less than 5% of SFA (Tables 1-6, Table 12).

Monounsaturated fatty acid

The highest amount of monounsaturated fatty acids (MUFA) were observed in *Hindbe bil zeit* from Mount Lebanon and Saida, *Falafel* from Beqaa, in *Fatayir sabanikh* from Beirut, and in *Lahm bil ajin* from Tripoli (Tables 1-6). The highest mean value of MUFA was observed in *Hindbe bil zeit* (Tables 11-12). Less than 2% of the dishes met > 20% DV for MUFA, while 60% met <5% and as such were considered poor sources of MUFA (Table 16).

Polyunsaturated fatty acid

The highest amount of polyunsaturated fatty acids (PUFA) were found in *Falafel* from Mount Lebanon, *Fatayir sabanikh* from Beqaa and Tripoli, *Lahm bil ajin* from Beirut, and in *Hindbe bil zeit* from Saida. *Fatayir sabanikh* had the highest mean value of PUFA across the governorates (Tables 11-12). Only 2% of the dishes met >20% DV for PUFA therefore the majority of the foods were considered as poor sources of PUFA (Table 16).

Trans fatty acids/trans fats

A high percentage of trans fatty acids (TFA) were observed in *Kafta wa batata* from Mount Lebanon, *Chichbarak* from Beqaa, *Riz a dajaj* from Beirut, *Baba Ghanouj* from Tripoli and in *Shawarma Lahma* from Saida (Tables 1-6). The highest mean value of TFA was observed in Riz a dajaj (Tables 11-12). All the dishes achieved <5% DV for TFA with an exception for *Shawarma Lahma* and *Riz a dajaj* (Table 16). While findings suggest that TFA content in traditional dishes is minimally contributing to the total fat DV, efforts should be put in place to eliminate TFA in the overall diet, in line with the recommendations included in the REPLACE

action package (WHO, 2018). This could be achieved through enforcing measures at a national policy level, activating regulation and monitoring systems, and increasing public awareness on the importance of eliminating TFA.

Polyunsaturated fatty acid: Saturated fatty acid ratio

The highest polyunsaturated fatty acid: saturated fatty acid (P:S) ratio was observed in *Moujaddara* from Mount Lebanon, *Fatayir Sabanikh* from Beqaa and Tripoli, *Lahm bil ajin* from Beirut, and in *Hindbe bil zeit* from Saida, while the highest mean value of P:S ration was observed in *Fatayir sabanikh* (Tables 1-6, Tables 11-12). The P:S ratio of all the dishes exceeded 1:1 and this is an indication of the low-fat quality in the foods. This may be attributed to the high use of animal fat sources rather than vegetable oils in the foods and raises the need for addressing food preparation modifications at the national level.

Polyunsaturated fatty acid: Monounsaturated fatty acid: Saturated fatty acid ratio

The Polyunsaturated fatty acid: Monounsaturated fatty acid: Saturated fatty acid (P: M: S) ratio across all food samples from the different governorates deviated from 1:1:1. The only exceptions were for *Malfouf mehshi*, *Batata mehshi*, *Chichbarak*, *Koussa mahchi*, and *Kebba bi saynia* from Mount Lebanon (Tables 1-6, Tables 11-12). This may be related to the cooking practices, type of oil used in cooking, or the different values of saturated fatty acid observed in the foods. These findings further highlight the need to modify traditional dishes in terms of fat to achieve a more calibrated P:M:S ratio. Individual studies report the effect of dietary lipids on the risk of developing coronary heart diseases. A deviated P:M:S ratio can raise serum cholesterol and impact heart disease risk markers (Virani et al., 2020).

Comparison between traditional dishes: Carbohydrate, protein, fat, and energy content

The highest carbohydrate percentage was observed in *Lahm bil ajin* and this dish contributed to 13.4% of the daily need of carbohydrate per day in a 2000 Kcal-diet. More than half of the dishes had good amount of carbohydrate (Table 13,14, 16). On the other hand, the highest protein content was observed in *Shawarma* and this dish contributed to more than 50% of the daily need for protein in a 2000 Kcal-diet. Only 2 dishes were considerably high in protein; *Kafta wa Batata* and *Shawarma dajaj* as their % DV of protein exceeded 20% (Tables 13,14, and 16). The highest amount of fat was observed in *Hindbe bil zeit* and its contribution to the daily need of fat was 28% in 2000 Kcal-diet. None of the dishes contained a fat content which contributes to <20% DV (Tables 13,14, and 16). At the same time, the lowest energy value was observed in *Baba ghanouj*, *Fattoush* and *Tabboula*, as these dishes contributed to less than 3% of the daily need of energy in 2000 Kcal-diet. The majority of the dishes did not exceed a DV of >20% (Tables 13, 14, and 16).

Comparison between traditional dishes: Vitamin A, Vitamin D, Vitamin E, Vitamin C, and dietary fibre content

Vitamin A, D and E

All the dishes contained trace amounts of vitamin A and vitamin D, except for *Sayadia* which contained a high amount of vitamin D with a % DV of 21. None of the foods tested were considered as good source of Vitamin E with exception to Borgul bi banadoura which contained good amount of vitamin E (Table 13, 14, and 16).

Vitamin C

Most of the traditional dishes contained traces of vitamin C. *Tabboula* was the only dish that contributed to more than 40% of DV for vitamin C (Tables 13, 14, and 16).

Dietary fibre

Among all the dishes, 23% were considered good sources of fibre and almost all the remaining contained little amounts (Tables 13, 14, and 16).

Comparison between Arabic sweets: Carbohydrate, protein, fat, and energy content

The majority of Arabic sweets had a carbohydrate amount exceeding 20% per 100 grams of each sample. In addition, protein content was low in 100 grams of the sweets with an exception for *Foustoukia*. Around 29% of the samples contained more than 20% of fat (Table 20). While for energy, findings revealed that 100 grams of an Arabic sweet sample covers for 10% to 27% of the daily need for energy in a 2000 Kcal-diet. The only exception was for *Barazik* as this contributed to less than 10% of the daily energy needs (Table 20). All sweets contributed to less than 5%, 11%, and 10% of the daily need of carbohydrate, protein, and fat respectively (Table 23).

Comparison between Arabic Sweets: Vitamin A, Vitamin E, Vitamin C, and dietary fibre content

Vitamin A, Vitamin E, and Vitamin C

Overall, all samples of Arabic sweets contained trace amounts of vitamin A, vitamin E, and vitamin C. Vitamin A content ranged from 8% to 15% in the Arabic sweets including; *Baklava*, *Baklava light*, *Ish el bulbul*, *Karabij joz maa crema*, *Maamoul mad joz*, and *Maamoul foustok*. While vitamin E and vitamin C content was less than 5% in the majority of the sweets (Table 23).

Dietary fibre

Around 30% of the samples contained an amount that exceeds 5% of fibre, while others had minimal amounts (Table 21).

Comparison between market foods: Fatty acid profile and fatty acid ratios

The total fat content ranged between 0.5 grams and up to 100 grams in 100 grams of the analysed market foods. The lowest total fat content was observed in *Baguette* and *Tuna Packed in Water* (0.5grams/100grams) while the highest content was observed in *Corn Oil*, *Olive Oil*, and *Sunflower Oil* (100grams/100grams). The SFA content varied across the market foods ranging between 0.5% to more than 50%. Half of the foods had a % DV higher than 20% for SFA except for *Butter*. Almost all products contained trace amounts of MUFA, PUFA, and TFA. The highest content of PUFA was found in *Sunflower Oil* (62.6 grams/100grams). With respect to TFA, the foods contained a percentage lower than 5% (Table 24). In addition, the P:S ratio and the P:M:S ratio were deviating from 1:1 and 1:1:1 respectively in all the market foods (Table 24).

As for the samples of coffee and nuts, almost all contained high amounts of fat, good amounts of SFA, trace amounts of TFA, and low amounts of PUFA and MUFA, except for mixed kernels (Table 25).

Comparison between market foods: nutrient content versus nutrition facts label

All the products were found to have discrepancies in reporting the actual nutrient content when compared to their respective nutrition facts label (Table 26). For instance, the *Butter Light* had a difference between the analysed (61.5grams/100grams) and the labelled (20grams/100grams) fat content. Some products such as *Sunflower Oil* and *Olive Oil* had matching values for fat content. As for the saturated fatty acid content, there was a discrepancy between the nutrition label and nutrient content of the *Chocolate wafers-brand 2* (19.1grams/100grams and 9grams/100grams), *Chocolate with milk* (36.1grams/100grams and 46grams/100grams), *Chocolate-Dark* (33.1grams/100grams and 23.3grams/100grams), *Potato Chips* (20.2grams/100grams and 10grams/100grams) and *Butter Light* (43.4grams/100grams and 53.3grams/100grams). Additionally, there were analysed values double or more than that of the labelled in products including *Lays Chips Cheese* and *Potato Chips Light* (Table 26).

While MUFA and PUFA were rarely reported on the nutrition facts label, analysis of the market food products revealed trace amounts as mentioned earlier. With regards to TFA, it was either mentioned as 0 grams or not reported on the nutrition label, while analysis showed traces of TFA in the foods (Table 26).

CONCLUSION _____

This national food composition report contributes to bridging the information gap on the nutrient composition of traditional foods and Arabic sweets as well as market foods commonly consumed in Lebanon. The data generated indicates that most of the foods consumed are sufficient sources of carbohydrates and dietary fibre, and contain moderate amounts of protein, fat and energy. A diversified traditional diet consisting of foods which are good sources of macronutrients can help maintain body functions, energy balance, and improve nutritional status of individuals (Carreiro et al., 2016). Despite cultural differences in cooking strategies, there was no statistical difference between the analysed traditional dishes samples across the different regions in Lebanon.

It is also important to emphasize on primary non-communicable disease prevention and to support the development and implementation of interventions that promote reduction of salt, sugar, and saturated fats. A high sodium content was observed with a daily value for exceeding 20% in more than half of the traditional dishes collected. Data from 2013 estimated that the Lebanese population consumes around 3.13 grams of sodium per day (Powles et al., 2013), exceeding WHO recommended maximum intake level of 2 g/day (WHO, n.d.). In addition, according to the latest WHO NCD STEPwise survey, around 26% of the Lebanese population reported adding salt always or often when cooking or preparing food at home (Republic of Lebanon, Ministry of Health & WHO, 2017). Reducing salt content of traditional dishes can be achieved through different key strategies such as policy interventions, consumer awareness and empowerment on the need to reduce salt intake, improving availability and accessibility of low-salt products, etc.

More than 90% of the dishes contained less than 5% of saturated fatty acids and the large majority of food dishes were considered poor sources of polyunsaturated fatty acids with only 2% containing >20% DV for polyunsaturated fatty acids. Many foods were identified to have a low polyunsaturated fatty acid: saturated fatty acid ratio, reflecting a low-fat quality food which can increase the risk of coronary heart diseases in the long term (Hammad & Pu & Jones, 2016). Therefore, there is a need for prioritizing fat content in foods and considering processing modifications in the food production system at the national level with the aim to achieve a higher polyunsaturated fatty acid: saturated fatty acid ratio intake among the population. For instance, one recommendation is to partially substitute animal fats with vegetable oils such as sunflower oil or corn oil during food processing and production.

At the same time, findings showed that deficiencies in micronutrients were prevalent amongst the majority of the analysed foods. Micronutrient inadequacies can constitute a health issue amongst a population and pose growth and development implications particularly when co-existing with overnutrition (Hwalla et al., 2017). In terms of iron, more than 60% of dishes were found to be deficient (<10% of the daily value). This finding raises a concern on the amount of iron consumed by the population particularly among high risk groups including preschool children, pregnant women, and women of childbearing age.

Preventive measures related to establishing good nutrition habits and supplementation of iron-rich foods are recommended. Strategies to tackle iron deficiency can involve initially food fortification and nutrition education on iron-rich foods as well as establishment of targeted nutrition interventions for high-risk groups, when needed. For instance, wheat and maize flour fortification are a simple, inexpensive and effective strategy for supplying vitamins and minerals (Hoteit et al., 2020). There is a need to revive action at policy level related to fortification of common staple foods to address the gap in micronutrients in foods in order to improve the quality of food supply and to decrease the risk and incidence of deficiency linked diseases and malnutrition among the Lebanese population.

Furthermore, findings from the comparison between the actual nutrient content and the nutrition facts label of market foods highlight critical discrepancies in labeling. Therefore, there is a need to ensure enforcing the implementation of food labelling standards by technical regulations and accordingly reformulating foods to reduce their content of salt, while reviewing that they are in line with relevant standards and guidelines on limits of nutrient content.

The inclusion of traditional Lebanese foods in dietary plans can help in planning healthy diets to prevent and manage non-communicable diseases. While the current Lebanese dietary habits have preserved many of the Mediterranean characteristics, national dietary guidelines should further highlight the nutritive value and health aspects of traditional foods. The mitigation of several health risk factors falls under the realm of different sectors, as such development of recommendations and policy measures should engage the different relevant actors to ensure that interventions are promoting foods consistent with a healthful diet.

The database has been created to incorporate a list on the nutrient composition of 111 foods common in Lebanon and relevant to the Middle East. In addition, a food exchange has been prepared for 65 Middle Eastern traditional dishes and Arabic sweets common in the Lebanese cuisine.

This work aims to deliver reliable data for use in many areas including nutrition assessment, counselling and education, epidemiology and research, food and nutrition policy work among others. It will allow its users to become self-efficient and self-sufficient while understanding food exchanges and nutrient content of foods. In addition, intersectoral use of the data is vital in order to strengthen sector linkages with the aim to improve the health and nutrition indices among the population.

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Annexes

Annex 1: Common name and Arabic name of traditional dishes

Common Name	Arabic Name
Baba ghanouj	بابا غنوج
Batata mahchi	بطاطا محشي
Borgul bi banadoura	برغل بندورة
Chichbarak	شيش برك
Falafel	فلافل
Fatayer sabanikh	فطائر سبانخ
Fattat Hommos	فتة حمص
Fattoush	فتوش
Foul moudamas	فول مدمس
Hindbe bil zet	هندبة بالزيت
Hommos bi tahini	حمص بالطحينة
Kafta wa batata	كفتة وبطاطا
Kebba bil sayniya	كبة بالصينية
Koussa mahchi	كوسا محشي
Lahm bil ajin	لحم بالعجين
Loubia bil zet	لوبيا بالزيت
Malfouf mahchi	ملفوف محشي
Moujadara	مجدرة
Moghrabia	مغربية دجاج
Mousaka batinjan	مسقعة باذنجان
Riz a dajaj	رز عدجاج
Riz bi lahma	رز باللحم
Sayadia	صيادية سمك
Shawarma dajaj	شاورما دجاج دون بطاطا
Shawarma lahma	شاورما لحمة دون بطاطا
Tabboula	تبولة
Warak enab	ورق عنب محشي
Yakhnat Bamia	يخنة باميا
Yakhnat Fassoulia	يخنة فاصوليا
Yakhnat Mouloukhia	يخنة ملوخية

Annex 2: Common name and Arabic name of Arabic sweets

Common Name	Arabic Name
Baklava Mixed	بقلاوة مشكل
Baklava Mixed Light	بقلاوة مشكل لايت
Barazik	برازق
Boundoukia	بندقية
Daoukia	داعوقية
Foustoukia	فستقية
Ghourayba	غريبة
Halawa	حلاوة
Halawa light	حلاوة لايت
Halawat El Jiben	حلاوة الجبن
Ish el bulbul	عش البلبل
Kallaj kashta	كلاج بالقشطة
Karabij joz maa crema	كرابيج بالجوزمع كريما
Katayef kashta	قطايف بالقشطة
Kounafa kashta maa kaak	كنافة بالقشطة بالكعك
Kounafa bil jiben	كنافة بالجبن
Maakaron	معكرون
Maakroun wa moushabak	معكرون ومشبك
Maamoul tamer	معمول بالتمر
Maamoul mad kashta	معمول مد بالقشطة
Maamoul mad joz	معمول مد بالجوز
Maamoul foustok	معمول بالفستق
Maamoul joz	معمول بالجوز
Madlouka	مدلوقة
Mafrouka kashta	مفروكة بالقشطة
Mafrouka foustok	مفروكة بالفستق
Moufattaka	مفتقة
Mouhallabiya	مهلبية
Moushabak	مشبّك
Nammoura	نمورة
Osmaliya	عثملية
Riz bil halib	رز بالحليب
Saniora	سنيورة
Sfouf	صفوف
Shaaybiyat	شعيبيات
Ward el sham	ورد الشام
Znoud El Sitt	زنود الست

Annex 3: Ingredients in traditional dishes

Dish	Ingredients
Baba ghanouj	Aubergines, garlic cloves, juice of lemon, tahini, pomegranate seeds, salt
Batata mahchi	Lamb ground onions, butter, salt, pepper, pine nuts, potato, tomato juice
Borgul bi banadoura	Coarse bulgur wheat, small pearl onions, chickpeas, cinnamon stick, caraway seed, vegetable oil, mild white pepper, salt
Chichbarak	Chichbarak Dough: multi-purpose flour, salt, water warm to form a paste, yeast, sugar Meat Stuffing: ground beef, salt to taste, black pepper to taste, cinnamon powder to taste, onion finely chopped, pine nuts, olive oil, bushel of parsley chopped Chich Barak Stew: yogurt, water, starch, garlic cloves crushed (optional), rice, dried mint, salt to taste
Falafel	Dry peeled fava beans dried chickpeas (Garbanzo beans), Italian parsley (chop away the stems), green cilantro (chop away the stems), freshly peeled crushed garlic cloves, red or yellow onion, green onions, salt, black pepper, flour, baking soda, red chili pepper (optional, if spicy falafel is desired), cumin Coriander. Falafel Tahini Sauce Ingredients: Tahini Paste, freshly squeezed lemon juice, garlic cloves, crushed, salt
Fatayer sabanikh	Fresh spinach, onions, pine nuts, lemon juice, olive oil, sumac, salt, plain white flour, caster sugar, baker yeast, olive oil, salt
Fattat Hommos	Chickpeas, tomatoes, onion, basil leaves, garlic cloves, pitta bread, pine nuts, yogurt, tahini and vinegar, vegetable oil, salt and pepper
Fattoush	Lettuces or romaine lettuce, cherry tomatoes, cucumbers, radishes, spring onions, flat-leaf parsley mint, pitta bread, olive oil, vinegar, sumac, salt
Foul moudamas	Broad beans, baking soda, water, water, salt, garlic cloves minced, lemon juice, olive oil
Hindbe bil zet	Chicory greens, water, olive oil, onions, salt, lemon juice
Hommos bi tahini	Chickpeas, garlic cloves, lemon juice, tahini, olive oil, salt
Kafta wa batata	Minced lamb, flat-leaf parsley, onions, salt and pepper, onions, red pepper, tomato juice, debs roman, olive oil, salt and pepper, potatoes, ripe tomatoes, vegetable oil.
Kebba bil sayniya	FInely ground beef (or lamb, lean, divided), bulgur cracked wheat, salt, all spice, cumin, onions (finely chopped)
Koussa mahchi	Minced lamb, small courgettes, short grain rice, olive oil, salt and black pepper
Lahm bil ajin	Plain white flour, caster sugar, baker's yeast, salt, olive oil, minced lamb, tomatoes, few drops of pomegranate molasses, salt and pepper
Loubia bil zet	Vegetable oil, white onions, sliced, Frozen bag green beans, garlic cloves, peeled Cans of chopped tomatoes, Salt and sweet pepper, to taste, 7 spices, Extra-virgin olive oil
Malfouf mahchi	Cabbage leaves, basic vegetables stuffing, tomato, lemon juice, water, cinnamon, garlic cloves, dry mint
Moujadara	Green or coral lentils, short-grain rice, onions, olive oil, salt

Dish	Ingredients
Moghrabia	Dry dough, Chick Peas, Pearl Onions, Vegetable Oil , Butter Caraway, Ground Cinnamon Ground Cumin, salt, black pepper
Mousaka batinjan	Eggplant, sliced into (you can leave skin on or peel), yellow or white onion, diced, garlic cloves, minced, low-salt chickpeas, extra virgin olive oil, low-salt diced tomatoes, tomato paste, Piquant Post Spicy Mint blend, Pita chips or crusty bread for dipping, salt and pepper to taste
Riz a dajaj	Breast chicken, basmati rice, carrot, onions, tomato juice, whole black peppercorns, whole green cardamoms, cinnamon, cloves, cumin, vegetable oils, salt
Riz bi lahma	Medium fat meat, basmati rice, carrot, onions, tomato juice, whole black peppercorns, whole green cardamoms, cinnamon, cloves, cumin, vegetable oils, salt
Sayadia	Sea bass, scaled and gutted or in fillets, basmati rice, onions, caraway seeds, ground cumin, pines nuts, olive oil, fish stock, vegetable oil, salt, flour, butter, lemon juice
Shawarma dajaj	Chicken, olive oil, onions, red vinegar, lemon juice, pepper, cinnamon, nutmeg, salt, 6 cloves of garlic
Shawarma lahma	Meat, olive oil, onions, red vinegar, lemon juice, pepper, cinnamon, nutmeg, salt, 6 cloves of garlic
Tabboula	Tomatoes, spring onions, flat leaf parsley, mint, bulgur, wheat, lemon juice, olive oil, salt
Warak enab	Vine leaves, tomatoes, onion, flat-leaf parsley, mint, lemon juice, short-grain rice, meat, olive oil, salt
Yakhnat Bamia	Lamb cubed, onions, garlic cloves minced, green coriander, okra, lemon juice, salt, pepper, water and tomatoes
Yakhnat Fassoulia	Shoulder of lamb, fresh white haricot beans, coriander, onions, garlic cloves, tomato juice, olive oils, 500 ml water or chicken stock, salt and black pepper
Yakhnat Mouloukhia	Mouloukhia, free-range chicken, basmati rice, coriander, garlic cloves, onion, shallots, pitta bread, vinegar, juice of lemons, vegetable oil and salt

Annex 4: Ingredients in Arabic sweets

Arabic sweet	Ingredients
Baklava Mixed	Sheets of phyllo pastry, unsalted melted butter, fragrant sugar syrup. Filling Ingredients: hulled unsalted pistachios, superfine sugar, orange blossom water, rose water.
Baklava Mixed Light	Sheets of phyllo pastry, unsalted melted butter, Sugar Alcohol. Filling Ingredients: hulled unsalted pistachios, Sugar Alcohol, orange blossom water, rose water.
Barazik	Sesame seeds (lightly toasted), clarified chilled butter, icing sugar, egg, vanilla, vinegar, flour, baking powder, a pinch of salt, thinly sliced pistachios, milk.
Boundoukia	Hazelnut, sugar, water, corn flour, salt, orange blossom water, rose water, butter
Daoukia	Hulled unsalted pistachios, semolina, sugar, milk, orange blossom water, rose water, butter, green colorant.
Foustoukia	Egg white, fine sugar, fine powdered sugar, blossom water, almonds, pistachio, dried flowers for decoration.
Ghourayba	Organic sugar cane, small grains mastic to yield powdered mastic, egg yolks, unsalted butter at room temperature, unbleached all-purpose flour, blanched whole almonds.
Halawa	Unbleached all-purpose flour, grounded aniseed, grounded cinnamon, small grains mastic finely grounded to yield powdered mastic, sesame seeds, blanched toasted almonds, confectioners' sugar, honey, unsalted butter, sunflower oil.
Halawa light	Unbleached all-purpose flour, grounded aniseed, grounded cinnamon, small grains mastic finely grounded to yield powdered mastic, sesame seeds, blanched toasted almonds, Sugar alcohol, unsalted butter, sunflower oil.
Halawat El Jiben	Akkawi cheese, sugar, semolina, water, arabia kashta, orange blossom water, rose water, sugar syrup, lemon blossom and grated pistachio for decoration.
Ish el bulbul	Kounafa dough, melted butter, honey, kashta, sweetened lemon blossom, pistachios.
Kallaj kashta	Sugar, pistachios, lemon blossom, milk, kallaj sheets. Kashta ingredients: milk, cream fresh, rose water, blossom water, corn flour, sugar. Sugar syrup ingredients: sugar, water, lemon juice
Karabij joz maa crema	Grounded finely walnuts, caster sugar, cold water, rose water, extra-fine semolina, unsalted softened butter, granulated sugar, grounded mahlab, whole milk, active dry yeast dissolved with sugar in water. Cream Ingredients: egg whites, sugar, rose water, blossom water
Katayef kashta	Flour, a pinch of salt, sugar, instant dry yeast, lukewarm water, baking soda, rose syrup. Akkawi cheese or ricotta mixed with mozarella, fresh grated mozarella cheese, sugar, rose water.
Kounafa kashta maa kaak	Milk, cream fresh, rose water, blossom water, corn flour, sugar, "hair" pastry, unsalted diced butter, fragrant sugar syrup.
Kounafa bil jiben	Akkawi cheese or cow's milk mozarella, "hair" pastry, unsalted diced butter, fragrant sugar syrup.
Maakaron	Blanched almonds plus whole almonds, superfine sugar, almond extract, freshly squeezed lemon juice, egg whites.
Maakroun wa moushabak	Flour, corn flour, yeast, water. Sugar syrup: sugar, water, lemon juice

Arabic sweet	Ingredients
Maamoul tamer	Semolina, grounded mahlab, clarified melted butter, instant dry yeast, sugar, full-fat milk, icing sugar for dusting. Chopped pitted dates, grounded nutmeg, melted butter
Maamoul mad kashta	Semolina, ghee, sugar, fine semolina, ground mahlab, yeast, rose water, blossom water. Filling ingredients: water, sweetened condensed milk, corn flour, blossom water
Maamoul mad joz	For filling: walnuts, pistachios, orange blossom water, rose water, sugar Semolina, flour (ferkha), unsalted butter melted, ghee, melted, instant yeast, flour, sugar, orange blossom water, rose water
Maamoul foustok	Regular semolina, unbleached all-purpose flour, superfine sugar, fast-acting (instant) yeast, unsalted butter at room temperature, orange blossom water, rose water. Hulled unsalted pistachio, superfine sugar, orange blossom water, rose water.
Maamoul joz	Semolina, grounded mahlab, clarified melted butter, instant dry yeast, sugar, full-fat milk, icing sugar for dusting. Fine chopped walnuts, sugar, orange blossom water, zest of orange, and cinnamon.
Madlouka	Milk, starch, sugar, semolina, fried nuts almond and cashew, vinegar, blossom water, ghee, water, ground pistachio liquid cream, lemon juice, sugar cherry
Mafrouka kashta	Semolina, cream liquid milk, red lemon blossom, ground pistachio, flower water, liquid whipping cream, white toast, butter, liquid vanilla, corn starch. Sugar syrup ingredients: sugar, water
Mafrouka foustok	Sugar, butter, sweetened concentrated milk, rose water, water, semolina, roasted pistachio mixture, and corn starch. Sugar syrup ingredients: sugar, water, rose water
Moufattaka	Rice, sugar, tahini, turmeric, water, pine nuts, cinnamon powder
Mouhallabiya	Whole milk, granulated sugar, liquid honey (optional), grounded almonds, grounded walnuts.
Moushabak	Flour, corn stretch, water, dry instant yeast, sugar, sunflower oil for frying. Sugar syrup.
Nammoura	Regular semolina, fine semolina, grounded mastic with sugar, sugar, salt, clarified melted butter, rose water, yogurt, baking soda, tahini, blanched almonds, rose syrup. Sugar, water, lemon juice, orange blossom water, rose water.
Osmaliya	Kounafa packet, milk, starch, melted ghee, sugar syrup, crushed pistachios.
Riz bil halib	Corn starch, cold milk, full-fat milk, heavy cream, vanilla pod, pre-soaked and drained short-grain white rice, sugar, rose water, orange blossom water.
Saniora	Flour, sugar, ghee, butter, almonds or pistachios
Sfouf	Semolina, flour, turmeric powder, milk, vegetable oil, sugar, water, baking powder, tahina to grease the baking tray, pine nuts
Shaaybiyat	Sheets of phyllo pastry, unsalted melted butter, fragrant sugar syrup. Walnuts, superfine sugar, grounded cinnamon, orange blossom water, rose water. Superfine sugar, freshly squeezed lemon juice, water, rose water, orange blossom water.
Ward el sham	Phyllo pastry sheets, cream, butter, vegetable oil, ghee, ground pistachios. Sugar syrup ingredients: sugar, water, lemon juice, rose water, blossom water
Znoud El Sitt	Spring roll dough, milk, liquid cream, starch, flour, water, rose water, corn oil, sugar syrup, pistachios.

Annex 5: List of market food products

Market food products
Arabic Bread-White
Arabic Bread-Whole wheat
Baguette
Biscuits Chocolate Quinoa
Biscuits Digestive
Biscuits Digestive Light
Biscuits with cream
Breakfast Cereals
Breakfast Cereals-Chocolate
Butter
Butter Light
Cake with Cream
Chocolate Dark
Chocolate Milk-1
Chocolate Milk-2
Corn Oil
Croissant Zaatar-1
Croissant zaatar-2
Doughnuts
English Cake-Chocolate
Hot Chocolate Powder
Instant Coffee
Kaak Asrouni
Kaak Debes and Cacao
Kaak Korshalli
Olive Oil
Pain au lait
Petit Fours-1
Petit Fours-2
Potato Chips-1
Potato Chips-2
Potato Chips Light-1
Potato Chips light-2
Sunflower Oil
Tahina
Tuna Packed in Oil
Tuna Packed in Water
Vegetable Margarine
Wafer-Chocolate-1
Wafer-Chocolate-2