AN INVESTIGATION ON THE BASIC CONTENTS OF THE MAIN DISHES OF THE TURKISH CUISINE*

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Abstract

Nutrition has been the most basic requirement since the creation of mankind. People have met this basic requirement with different ways and methods in the course of their lives. The main dishes are known as the most important element in their meals. Main meals consumed especially at lunch and dinner are thought to be a reflection of the national cuisine. Therefore, analyzing the dishes in meals will also reveal the eating habits in the Turkish culture in a way. The data inside 767 main dishes of the Turkish cuisine were collected and the TF-IDF (Term frequency-inverse document frequency) analysis was conducted via the QDA-MINER software. Depending on analysing both of Turkish habits and of most popular raw materials in the cuisine can be uncovered. The average number of products in the main dishes of the Turkish cuisine, distribution of these products into nutrient groups and importance levels of the used products were shown. As a result; beef, butter, garlic, tomatoes, lemons, parsley, oil, eggs, potatoes and green peppers were found to have high percentage of use.

Keywords: Turkish Cuisine. Turkish Culinary Culture. Main Course.

UMA INVESTIGAÇÃO SOBRE O CONTEÚDO BÁSICO DOS PRINCIPAIS PRATOS DA COZINHA TURCA

Resumo

A nutrição tem sido o requisito mais básico desde a criação da humanidade. As pessoas cumpriram esse requisito básico com diferentes maneiras e métodos ao longo de suas vidas. Os pratos principais são conhecidos como o elemento mais importante em suas refeições. Pensa-se que as refeições principais consumidas especialmente no almoço e no jantar sejam um reflexo da culinária nacional. Portanto, analisar os pratos nas refeições também revelará os hábitos alimentares da cultura turca. Os dados contidos em 767 pratos principais da culinária turca foram coletados e a análise TF-IDF (Frequency Frequency Document Inverse Frequency) foi realizada através do software QDA-MINER. Dependendo da análise dos hábitos turcos e das matérias-primas mais populares da culinária, é possível descobrir. Foram mostrados o número médio de produtos nos principais pratos da culinária turca, a distribuição desses produtos em grupos de nutrientes e os níveis de importância dos produtos usados. Como um resultado; carne, manteiga, alho, tomate, limão, salsa, óleo, ovos, batata e pimentão tiveram alta porcentagem de uso.


UNA INVESTIGACIÓN SOBRE EL CONTENIDO BÁSICO DE LOS PRINCIPALES PLATOS DE LA COCINA TURCA

Resumen

La nutrición ha sido el requisito más básico desde la creación de la humanidad. Las personas han cumplido este requisito básico con diferentes formas y métodos en el curso de sus vidas. Los platos principales son conocidos como el elemento más importante en sus comidas. Se cree que las comidas principales consumidas especialmente en el almuerzo y la cena son un reflejo de la cocina nacional. Por lo tanto, analizar los platos en las comidas también revelará los hábitos alimenticios en la cultura turca de alguna manera. Se recopilaron los datos dentro de 767 platos principales de la cocina turca y se realizó el análisis TF-IDF (Término frecuencia-frecuencia de documento inverso) a través del software QDA-MINER. Dependiendo del análisis de los hábitos turcos y de las materias primas más populares en la cocina, se pueden descubrir. Se mostró el número promedio de productos en los platos principales de la cocina turca, la distribución de estos productos en grupos de nutrientes y los niveles de importancia de los productos utilizados. Como resultado; carne de res, mantequilla, ajo, tomates, limones, perejil, aceite, huevos, papas y pimientos verdes tienen un alto porcentaje de uso.

Palabras clave: Cocina Turca. Cultura De Cocina Turca. Plato Principal.

* This study is derived from the master's thesis titled “A comparative study on the contents of main course of international cuisine”.
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*** Ph.D. in Tourism Management (1998) at Aydın Adnan Menderes University. He is professor at the Department of Gastronomy and Culinar Arts at Sakarya University of Applied Sciences. His research interests are gastronomy and tourism. Orcid ID: https://orcid.org/0000-0002-3681-6137 (msaristik@sakarya.edu.tr)
1 INTRODUCTION

The word kitchen means “the place where food is cooked”. The concept of culinary includes all the applications that enable the preparation, cooking, preservation of food and beverages, which enable people to meet their basic needs and the use of the tools and techniques necessary for these processes (Culture and Tourism Ministry, 2019a). This practice, considered an intangible cultural heritage, takes place in cooking that goes beyond simple physiological eating and ultimately creates a social and cultural relationship between the guest and the host (Scarpato, 2004; Carbone, 2016; Lovera, 2016).

The culture of the word “historical, created in the social development process all the material and creating them with spiritual values, used to transmit to future generations, is a set of tools that shows the measure of man’s natural and social environment sovereignty” (TDK, 2019).

The cultural values of a society are as influential in their lifestyles as they are in their lifestyles (Tezzcan, 2000; Şar, 2013). To Carneiro (2003) culture and food are closely linked, because in the act of eating, different processes of socialization of man are implicit. These fundamental processes in the definition of man as a cultural and participatory being in a social context.

The concept of culinary culture is about food, food and beverage types and their preparation, cooking, storage and consumption; consequently, space and equipment, eating and drinking traditions and distinctive cultural describes an integrated structure consisting of beliefs and practices developed with this framework (Culture and Tourism Ministry, 2019b).

Talking about culinary culture and the tradition of eating indicates the existence of a bridge stretching from the past to the future, that there are values that can be taught and developed (Haydaroğlu, 2003, p. 1). The culinary culture of each community is shaped according to the belief of the locality in which it lives, its geographical, agricultural characteristics, socio-economic conditions and its interaction with other societies.

Any change in these factors is reflected in the culinary culture. In this way, culinary cultures become richer by interacting and changing; or they become local or disappear within another culinary culture (Közleme, 2012, p. 25).

The cuisine of a people is linked to their culture and way of life. Recognizing this cuisine as something that represents your community values your cultural heritage. This starts with people who do not want to lose their origins and see themselves valued through the dishes they eat daily (Matias and Mascarenhas, 2008 p. 5).

When we review the literature, it is seen that the structure of Turkish culinary culture is handled in different ways. In this study, pre-Islamic Central Asian cuisine, Islamic period and Seljuk cuisine, Ottoman cuisine and finally the cuisine of the Republican Period will be examined.

The contents showing the products used in the main dishes of the Turkish cuisine were analyzed via the QDA-MINER software. Moreover, the distribution of these products into nutrient groups and their rates of usage were shown in tables/graphs.

2 THEORETICAL REVIEW

2.1 Culinary and Culture

It is a synonym for gastronomy in kitchens (Kivela and Crotts, 2005, p. 41). Culinary tourism emphasizes the use of local materials, the methods used in the traditional way, the pleasure and the importance of resources, and the importance of those who seek a unique concept in a focused environment (Munoz & Wood, 2009).

The term culinary tourism was first here in 1998 to express the idea of tourists through eating other cultures (Long, 2003). Wolf (2002) emphasized that culinary and / or gastronomic tourism should be described with enjoying and amazing experiences by travel.

A portrait of gastronomic regions and inhabitants as a place of social, cultural, economic and historical history (López-Guzmán and Sánchez-Carizares, 2012, p. 169; Fusté-Forné, 2017, p. 96). In addition to having a competitive advantage, gastronomic tourism reflects a neighbouring cultural identity and history (Barroco and Augusto, 2006, p. 37).

To Eren (2019, p. 13) there is an important element in the customer satisfaction of the employees who serve tourists in the center of the cultural heritage and cultural experiences, which is accepted as the first condition of gastronomic tourism. However, dining activities, cooking courses and farm visits are members who want to have a very positive image. In addition, these products play an important role in the economic development of the regions (Novelli, 2006) and the promotion of the target brand (Getz, 2008, p. 421).

Today, the senses of eating have been explained by physically viewing something, touching, hearing, tasting and smelling (Kivela and Crotts, 2006, p. 360). Travel is a key factor in which food is part of the next people as well as having a better knowledge of the culture visited the place (Martins and Baptista, 2010).

As a result of these trips, tourists not only experience food and beverage, but also gain in-depth knowledge of local, regional cuisine and culture (Kivela and Crotts, 2005, p. 43).
2.2 Turkish Culinary Culture

The development of the Turkish cuisine is known to have been influenced by the periods of the Central Asian Turks, Seljuk and Ottoman Empires. However, it is important not to forget the rich culture of nomadic Turks who migrated to Anatolia in the past when it comes to the formation of today's Turkish cuisine (Güler, 2007; Kızıldemir et al., 2014).

"The Turks who migrated to Anatolia from Central Asia have a rich culture due to their historical background. Meat and fermented dairy products used by the Central Asian migrants had an effect on the formation of the Turkish culinary culture using the Mesopotamian grains, fruit and vegetables of the Mediterranean surroundings and the spices of South Asia together" (Baysal, 1993a, p. 12).

2.2.1 Central Asian Period (before 1040)

The Turks selected the steppe region between the Ural Mountains and the Altai Mountains as their homeland after settling down in Central Asia during the Neolithic Age BC. Equestrian nomadic culture was born and developed in this region.

The Turks with horses and sheep flocks continued to migrate in accordance with seasonal conditions (Koşay, 1981, p. 221; Akman and Mete, 1998, p. 10). Their dishes consisted of fatty pastries prepared with wheat flour, milk, dairy products, horses and sheep meat, and their drink was Kounmis, which was made from mare's milk (Koşay, 1981, p. 221). In the region, ovine breeding is more common than bovine breeding because of harsh winters and nomadic conditions (Alpargu, 2008, p. 17).

Central Asian Turks used the meat of horses, sheep, goats and other bovine animals in their kitchens. Fat was the main nutrient for the Turks who were engaged in animal breeding. Butter was made of yoghurt rather than milk and also tallow was used apart from butter (Ögel, 2000, p. 14). Reference of Mahmud al-Kashgari to the smell of horse meat sets forth the status and importance of horse meat in the old Turkish society (Kaşgarlı, 2005, p. 600).

In Central Asian Turkish history, the relations of the Turks with the Chinese have always been of great significance. These relations were sometimes friendly, and sometimes continued between the countries despite wars. Mete wanted to conquer the Silk Road, which was economically and culturally important together with its fertile plains, through his invasions (Ögel, 1979, p. 35; Sürücüoğlu and Özlçelik, 2008, p. 1293).

In later periods, the Chinese were told in the agreements made to prevent Turkish attacks that they would not be attacked if they helped with food (Ögel, 1979, p. 43). This situation is said to have led to the interaction of the Chinese cuisine with the Turkish cuisine. As a result of this interaction, rice, the main nutritional source of China, has been used in the Turkish cuisine since ancient times (Gürsoy, 2005, p. 77).

Although the interest in the dishes made with vegetables in the old Turkish cuisine was low, plants such as zucchinis, beetroots, leeks, carrots, onions, garlics, turnips, radishes, eggplants, mountain spinach and cucumbers were harvested in arable lands (Alpargu, 2008, p. 20). Broad beans, beans, peas, lentils and chickpeas are among the legumes used (Gürsoy, 2005, p. 78).

2.2.2 Islamic Period and Seljuk Cuisine (1040-1299)

The Turks' choice of Islam influenced the development of culinary cultures (Akin and Lambraki, 2004, p. 16). With the choice of the Islamic religion, they stopped consuming the foods and beverages banned in the Qur'an over time (Baysal, 1993b, p. 3). Changes occurred in their table manners and traditions with Islam. Regarding the table manners in the Central Asian Turkish cuisine under the Islamic effect, Yusuf Khass Hajib (1947) told the following:

"Don't start eating before your elders start. Start eating with the basmala and eat with your right hand. Don't touch the bites in front of someone else, eat it out of your own. Do not bring out a knife and do not remove meat from a bone. Don't be too gluttonous and don't sit so sluggishly. However, no matter how full you are, extend your hand and eat the food offered to you with such a desire and pleasure that the woman of the house, who prepared that food, becomes happy. Thus, the trouble of those who prepare a feast for you is worth it. Bite and chew slowly what you put in your mouth. Do not blow the hot food with your mouth. When you are eating, do not disturb other people by wiping your hands on you. Eat moderately, because people should eat in small quantities every time."

Some of the Great Seljuk Empire communities established in Asia came to Anatolia in groups. After the Battle of Manzikert in 1071, a great part of Anatolia came under Seljuk domination and the Anatolian Seljuk State was founded in 1077 (Akin et al., 2015, p. 41). Beside making Anatolia their homeland, the Turks helped the formation of a culture in which people were connected to each other through cultural effects and Islam was prominent.
Among the few cuisines of the world by completing this line as well (Közelme, 2012, p. 114).

In the Seljuk period, there are two meals, which are mid-morning and evening meals. Preference is given to foods which help with feeling full. Dinners do not have a wide variety and it is cooked before the sunset. Snacks generally consisted of dairy products and fruit.

Animals eaten during the Seljuk period included lambs, goats, horses, birds, fish and chickens. Vegetable dishes were not so popular (Güler, 2010, p. 25). With the understanding of Islam, simplicity stands out in the cuisine due to the restriction caused by the avoidance from some ingredients used in the Seljuk cuisine and extravagancy (Gürsoy, 2004, p. 94-112).

Grains used in the Seljuk cuisine are known as barley, wheat, corn, rice, rye; legumes as lentils, beans, chickpeas; vegetables as leeks, garlic, onions, spinach, peppers, eggplants, celery, lettuce, mint, poppy, cucumbers, carrots, garden cress, radishes; fruits as apples, pomegranates, quinces, pears, peaches, mulberries, apricots, grapes, figs, watermelons, melons, locust, chestnuts, almonds, walnuts, peanuts, hazelnuts, citrus fruits and dates; spices as sesame, cumin, sugar, salt, saffron; dairy products as cheese, butter, yoghurt; pastries as phyllo, bread, layered pies, cookies and bagels (Teczan, 1982, p. 118; Gürsoy, 2004, p. 90-91; Çetin, 2008; Erdoğan, 2010; Kızıldemir et al., 2014; Akin et al., 2015, p. 43).

It is seen that there are changes in the culinary culture of the Turks who migrated to Anatolia. This change occurred due to the variety of the products growing on the fertile Anatolian lands, particularly spices which entered the cuisine as a result of interacting with the Arabs, and the interaction with societies from different backgrounds.

2.2.3 The Period of the Ottoman Empire (1299-1923)

Developed during the Ottoman Period, the Turkish cuisine was organized in such a way that no people would stay hungry in the country thanks to its rich variety. In soup kitchens, food was given to poor, needy and traveling people (Sürrücüoğlu, 1986, p. 117; Sürrücüoğlu and Özcelik, 2008, p. 1303).

The Turkish cuisine, which started to expand together with the arrival of the Seljuk Turks in Anatolia, began to develop in the 15th century and ranked among the few cuisines of the world by completing this phase in palaces and mansions in the 16th and 17th centuries (Sürrücüoğlu and Özçelik, 2008; Tuncel, 2000, p. 50).

The Ottoman Period of Regression in the 19th century influenced the Turkish culinary culture as well. In other periods, the wide geography of the Ottoman Empire, and as a result, its interaction with many different cultures were shown to have a role in the development of its cuisine (Tuncel, 2000, p. 50).

Rich mansions as well as the palace kitchen played a significant role in the development and diversification of the cuisine during the approximately 623-year Ottoman reign. During the period of Sultan Mehmed the Conqueror, the palace kitchen was enlarged with extensions, cooks made contribution to the expansion of the palace kitchen by competing with each other in order to produce food which would be liked by the people in the palace and to show the kitchen more spectacular in feasts that would be given in the palace (Akin et al., 2015, p. 43).

The Ottoman cuisine is examined under two titles as palace kitchen and public kitchen. Palace kitchen had great importance in terms of taste, organization, eating culture and variety (Közelme, 2012, p. 131). Herbs and spices used in the Ottoman cuisine consist of cumin, mustard, saffron, coriander, cinnamon, musk, olives, Wallachian salt, gum, vinegar, black pepper, cinnamon, clove, hibiscus; sweeteners consist of peppermint, basilicum, garlic, parsley, basil and tomato paste after the discovery of the new continent (in 1492); oils consist of olive oil, tail fat, ghee; legumes and grains consist of bulgar, wheat, barley, rice, flour, lentil, wheat starch, chickpeas; foods of animal origin consist of lambs, sheep, goats, eggs, cream, oysters, shrimps, chickens, cheese, honey, game birds (ducks, sparrows, partridges and quails), game animals (deer, rabbits, roe-deer and fallow deer), fish, milk, yogurt, trotters, dry cottage cheese, geese, cattle tripe; vegetables consist of leeks, cress, lettuce, cabbage, onions, cucumbers, spinach, turnips, chard, celery, radishes and zucchinis (Güler, 2010, p. 28; Farqoghi and Neumann, 2006, p. 38; Akin et al., 2015, p. 44).

Beans, green peppers, potatoes, tomatoes, turkeys, cocoa, corns, oranges, tangerines, bananas, pineapples and some types of zucchinis were introduced to the Ottoman cuisine between the 15th and 19th centuries (Gürsoy, 2004, p. 137). Although some products are very popular in Europe, it is seen that they do not have a place in the Ottoman culinary culture because of religious beliefs.

The Ottoman cuisine is based on kebabs, stews, fries, meatballs and cutlets prepared with lamb meat and mutton, many types of rice, grains, legumes and soup cooked with broth (Sürrücüoğlu and Özcelik, 2008, p. 1305). Its culinary culture embodies tens of desserts
such as kadaif, baklava, saffron and rice dessert, zulbiye and halkicini (Gürsoy, 2004). Its drinks are comprised of lemonade, Turkish coffee, fruit stew, water and sweetened juice. It was rich in fruit stew and sweetened juice because alcoholic beverages were forbidden by religion (Bilgin, 2008).

2.2.4 The Republican Period (established in 1923)

Traditional Turkish hospitality has an important place in the development and enrichment of the Turkish culinary culture (Sürücüoğlu and Akman, 1998, p. 45). Apart from the daily meals, dishes cooked for special and ceremonial occasions show the generosity of the Turks in offering food, and even though most of these dishes are in our daily lives, they have some forms which are cooked for special occasions.

The Turks have been the founders of many states and empires throughout the ages. The states which the Turks founded before and after Islam were respectively: Huns (220 BC-216 AD), Tabgachs (216-394), Avars (394-552), Gokturks (552-745), Uighurs (745-940), Karakhanids (940-1040), Great Seljuks (1040-1157), Anatolian Seljuks (1157-1308), Chagatais (1308-1335), Ilkhanids (1335-1370), Timurids (1370-1447), Ottomans (1447-1922) and finally, the Republic of Turkey (1923 -......) (Eravsar, 2008, p. 9).

The country has a population of 82 million in 2018 (TSI, 2019). Covering an area of 783.562 km² both in Asia and Europe, Turkey is a country where several different cultures come together Turkey (Sauner, 2008, p. 261). Turkey is physically located in the northern hemisphere and moderate climate zone. In terms of its geographical location, Asia, Europe and the Middle East region has a unifying feature and is located on the transitional routes between the continents. Turkey, whose average elevation is generally higher than that of the world, has a physical geography with a great variety of surface features, flora and fauna (Zengin, 2006, p. 47). In addition, various products are observed in arable areas since the country has many rivers and lakes. It is clearly seen that hazelnuts, olives, grapes, sugar beets, wheat and citrus crops are grown in the country. There are many kinds of fish because it is surrounded by sea on three sides (MacVeigh, 2009, p. 10). There are three different climates: Mediterranean (hot and dry summers, warm and rainy winters), Black Sea (oceanic and temperate marine climate, rainy in all seasons) and continental (hot and dry summers, cold and snowy winters) throughout the country (Gürdal, 2001, p. 314). Depending on this situation many vegetables and fruits can be grown.

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<th>Religious Holidays and Special Days</th>
<th>Celebration, Farewell, Welcoming Days</th>
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<td>Ramadan</td>
<td>Newroz</td>
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<td>Blessed Days</td>
<td>Marriage Ceremony</td>
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<td>Eves and Religious Festivals (Ramadan and Sacrifice)</td>
<td>Birth</td>
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<td>Muharram</td>
<td>circumcision</td>
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<td>Pilgrimage</td>
<td>Military Service</td>
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<td>Seasonal Holidays and Special Days</td>
<td>Rain Prayer</td>
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<td>Cherry Festival</td>
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<td>Yoghurt Festival</td>
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<td>Mating of Sheep</td>
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<td>Pilaf with Crocus Bulbs</td>
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Cultures influence the traditions, customs, foods and beverages of the society. It is possible to see this situation clearly when we look at the history of the Turkish culinary culture. We can examine today’s Turkish culinary culture in seven regions. These regions are composed of Eastern Anatolia Region, Central Anatolia Region, Black Sea Region, Mediterranean Region, Aegean Region, Marmara Region and Southeast Anatolia Region according to their geographical size (Zengin, 2006). According to the data of the Turkish Statistical Institute (2017), the agricultural products grown in Turkey consist of the following: grains: wheat, barley, corns, oats, rice, chickpeas, red lentils, green lentils; vegetables: potatoes, garlic, onions, tomatoes; industrial plants: sugar beets, tobacco, tea, cotton, anise, poppy, hemp (under state control); oil plants: sunflower, olives, peanuts, soybeans, rapeseed (canola), safflower (canola); dry legumes: broad beans, peas, chickpeas, beans, black-eyed peas, fenugreens; hard-shelled fruits: almonds, hazelnuts, walnuts, chestnuts, pistachios; spices: red pepper, anise, cumin, thyme, black cumin, fennel, coriander, kochia, caper; fruits: apples, grapes, watermelons, melons, lemons, grapefruits (gold balls), tangerines (clementine, satsuma), nuts, apricots, mulberries, pomegranates,
strawberries, Trabzon dates, blueberries, blackberries, raspberries, peaches, figs, bananas, kiwis and pistachios.

The agricultural products, in whose production we come first worldwide, are hazelnuts (72%), cherries (21%), figs (25%), apricots (19%) and quinces (23%). The fish products hunted in Turkey (1,000 tons or above) consist of red mullets, sprat fish, anchovy, horse mackerel (kraça), horse mackerel (karagöz), gray mullets, chub mackerel, bogues, bluefish, haddock, bluefin tuna, sardines, striped red mullets and shads; products of animal origin consist of cattle (calf, bullock, ox), buffaloes, sheep, goats, chickens, ducks, turkeys, geese, beekeeping and camels.

From past to present, the Turkish cuisine has changed and developed depending on many effects. As a result, it had a rich structure and acquired some aspects with its own characteristics, culture, eating habits and these historical processes. The general characteristics of the Turkish cuisine can be listed as follows:

- Due to the geographical location of the region, there are differences in food (Güler, 2007, p. 22, Halici, 2009, p. 34-35).
- Culinary culture varies according to social structure (Mussman and Pahali, 1994, p. 17; Doğubay, 2000, p. 13-16; Güler, 2007, p. 22).
- Turkish food shows changes according to special days and ceremonies (Güler, 2007, p. 22; Halici, 2009, p. 31).
- 3 meals (morning, lunch and dinner) are consumed (Nenes, 2009, p. 460).
- Breakfast (Nenes, 2009, p. 460) and soup has an important place in the kitchen (Doğubay, 2000, p. 25; Halici, 2009, p. 30).
- In the Turkish cuisine, olive oil is used more often in the regions where olive trees are common although butter, tail fat and tallow are used in general (Doğubay, 2000, p. 25; Aktaş and Özdemir, 2007, p. 26).
- Bread and pastries (pide, lavash, pies, turkish bagels, pastry) have an important use (Aktaş and Özdemir, 2007, p. 26; Doğubay, 2000, p. 10).
- Cereals (grains), as in the past, are also of high importance today (Güler, 2007, p. 22; Nenes, 2009, p. 460).
- Milk and dairy products (yogurt, buttermilk, cheese, etc.) have an important use in the cuisine (Aktaş and Özdemir, 2007, p. 26).
- Tea and Turkish coffee are important drinks. In addition, sherbet, stewed fruit, compote, herbal teas (linden, chamomile, mint, lemon, sage), turnip juice, salep, carbonated drinks (last 20 years) (Yüksel, 2011, p. 565-566) and alcoholic beverage consists of raki and wine (Nenes, 2009, p. 461).
- Kebabs and stew dishes (Doğubay, 2000, p. 25).
- Sausage and pastrami (Nenes, 2009, p. 460).
- Hodgopodge (a few vegetables coming together) dishes (Doğubay, 2000, p. 26).
- The use of salt in dishes is widespread (Doğubay, 2000, p. 26).
- In the Turkish cuisine, decoration of the dishes is not so important. Attention is paid to taste rather than the appearance of the dishes (Güler, 2007, p. 22).
- There are no special sauces in the Turkish cuisine, instead, products made of tomatoes and broth are used (Güler, 2007, p. 22).
- Fruits or dried fruits are used for sweetening the dishes (Közleme, 2012, p. 235) and Molasses (pekmez), baklava, Turkish delight, halva, kadayif, rice pudding, lokma (dessert made with flour and fried in oil and soaked in syrup) and ashura are the most known and consumed dessert varieties (Nenes, 2009, p. 462; Yüksel, 2011, p. 566).

2.2.5 Nutrient Groups

The edible animal tissues and plants provide the nutritional values necessary for life. Protein, fat, carbohydrates, vitamins and minerals in nutrients constitute the nutritional elements (T.C. Sağlık Bakanlığı, 2008, T.C. Sağlık Bakanlığı ve Hacettepe Üniversitesi, 2015).

Each nutrient is different in terms of the nutritional elements it contains. However, some of the nutrients can be interchangeable due to their content. After scientists started working in this field, nutrient groups began to be formed and nutritional elements which needed to be consumed were stated (T.C. Sağlık Bakanlığı ve Hacettepe Üniversitesi, 2015, p. 19).

This issue is discussed in five, six and seven groups in similar studies. In this study, they were investigated in nine groups on the basis of the study conducted by Erdoğan et al. (2009, p. 108). These groups are as follows:

- **Milk and dairy products:** Milk, cheese, yoghurt, kephir, powdered milk, soy milk. Nutrients from the milk group are the source for a lot of nutritional elements such as Vitamin B_{12}, protein and vitamin B_{12} (T.C. Sağlık Bakanlığı ve Hacettepe Üniversitesi, 2015, p. 20).
- **Meat and meat products:** Butchery animals (buffaloes, camels, pigs, cattle, sheep, goats, etc.), poultry animals (geese, ducks, chickens, etc.), aquaculture products (shellfish and fish varieties), game animals (partridges, rabbits, quails, ducks, etc.),
An Investigation on the Basic Contents of the Main Dishes of the Turkish Cuisine
Muzaffer Çakmak & Mehmet Sarıoğlu

3 METHOD

In this research, qualitative research method was used and secondary data were used. Data were collected from the secondary sources of the selected countries' main dishes.

The collected data were analyzed at the following stage and the findings were reported. In this research, critical case sampling method was preferred from the purposive sampling methods.

Critical case sampling is expressed with "if this happens here, it will definitely happen in other similar cases" or on the contrary, "if this does not happen here, it will definitely not happen in other similar cases." which are the most important indicator of the presence of a critical case or cases (Patton, 2002, p. 237).

The data obtained in this study were used examined with the QDA MINER-WordStat software via the TF-IDF (term frequency-inverse document frequency) analyses. The TF-IDF weighting method is the term normalization method in the IR field. It determines the importance of the terms in documents. Thus, it performs normalization on the terms in order to decrease the effect of the frequently used words (Ahmadiouei, 2014, p. 12; Han, 2012, p. 23).

Term frequency (TF), represents the usage frequency of the term t in a document (f), divided into the total number of the terms in the relevant document (df). Inverse document frequency points at (IDF), N represents the total number of documents, df stands for the total number of documents in the whole compilation, where the word was used. If the IDF value is found high, it means the term is important for the determination of the related category (Ahmadiouei, 2014, p. 12).

\[
\text{TF Calculation: } \quad \text{TF} = \frac{f}{df} \\
\text{IDF Calculation: } \quad \text{IDF} = \log \left( \frac{N}{df} \right) \\
\text{TF-IDF Calculation Method: } \quad \text{TF-IDF} = \text{TF} \times \text{IDF}
\]

4 FINDINGS RELATED TO THE MAIN TURKISH DISHES

The research has been carried out on Turkish culinary culture, which has thousands of years of history and has been home to many civilizations in the past. There are 7 regions (Marmara, Aegean, Mediterranean, Central Anatolia, Black Sea, Southeastern Anatolia and Eastern Anatolia) and 3 different climate type (Mediterranean, Black Sea and Terrestrial) around the country.

Data collection was based on literature review, books (course and food), magazines and internet (blog, columnists and chefs). As a result of the data obtained, 767 main meals were analyzed.

Frequency analysis reveals the importance of the products used in reverse frequency analysis. In this context, which food groups and products are used in the preparation of the main courses are listed according to the importance of the products used in the evaluated meals.

4.1 Data Presentation

In total, there are 6261 products among the reviewed 767 main dishes of the Turkish cuisine. However, 214 products were excluded from the evaluation due to spelling errors during data entry. Therefore, 8047 products were assessed in total during the distribution of the content of the main dishes of the Turkish cuisine into the nutrient groups.
When the frequency distributions of the data in Table 2 are reviewed, the highest distribution is seen in salt, black pepper, onion, oil, tomato, beef, butter and garlic. However, the order of the used products changes when distributions are examined according to the TF-IDF value. Hence, the frequency values are given in a mixed form.

- **Milk and dairy products**

When we examined the data in Table 3, 267 milk and dairy products were found to be used in the related main dishes of the Turkish cuisine. 38.58% of these products consist of "kashar cheese". "Milk" comes in second with its usage rate of 29.96%. Yogurt identified with the Turkish people and cuisine is in the third place with 22.85%. The other products include white cheese with 3.37%, string cheese with 1.5% and buttermilk with 0.37%.

### Table 2: Values of the Products Used in the Content of the Main Dishes of the Turkish Cuisine.

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Name of Product</th>
<th>Frequency</th>
<th>Shown* (%)</th>
<th>Processed* (%)</th>
<th>Number of Cases***</th>
<th>TF-IDF****</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Beef</td>
<td>237</td>
<td>3.79</td>
<td>3.57</td>
<td>234</td>
<td>120.6</td>
</tr>
<tr>
<td>2.</td>
<td>Butter</td>
<td>225</td>
<td>3.60</td>
<td>3.39</td>
<td>220</td>
<td>120.5</td>
</tr>
<tr>
<td>3.</td>
<td>Garlic</td>
<td>222</td>
<td>3.55</td>
<td>3.34</td>
<td>219</td>
<td>119.3</td>
</tr>
<tr>
<td>4.</td>
<td>Tomato¹</td>
<td>387</td>
<td>6.19</td>
<td>5.82</td>
<td>375</td>
<td>117.6</td>
</tr>
<tr>
<td>5.</td>
<td>Lemon</td>
<td>185</td>
<td>2.96</td>
<td>2.78</td>
<td>181</td>
<td>114.7</td>
</tr>
<tr>
<td>6.</td>
<td>Parsley</td>
<td>194</td>
<td>3.10</td>
<td>2.92</td>
<td>194</td>
<td>114.5</td>
</tr>
<tr>
<td>7.</td>
<td>Oil</td>
<td>403</td>
<td>6.45</td>
<td>6.07</td>
<td>393</td>
<td>114.3</td>
</tr>
<tr>
<td>8.</td>
<td>Egg</td>
<td>178</td>
<td>2.85</td>
<td>2.68</td>
<td>176</td>
<td>112.6</td>
</tr>
<tr>
<td>9.</td>
<td>Potato</td>
<td>129</td>
<td>2.06</td>
<td>1.94</td>
<td>125</td>
<td>100.8</td>
</tr>
<tr>
<td>10.</td>
<td>Green pepper</td>
<td>116</td>
<td>1.86</td>
<td>1.75</td>
<td>115</td>
<td>94.8</td>
</tr>
<tr>
<td>11.</td>
<td>Carrot</td>
<td>115</td>
<td>1.84</td>
<td>1.73</td>
<td>115</td>
<td>94.0</td>
</tr>
<tr>
<td>12.</td>
<td>Chicken</td>
<td>112</td>
<td>1.79</td>
<td>1.69</td>
<td>111</td>
<td>93.3</td>
</tr>
<tr>
<td>13.</td>
<td>Dill</td>
<td>107</td>
<td>1.71</td>
<td>1.61</td>
<td>106</td>
<td>91.2</td>
</tr>
<tr>
<td>14.</td>
<td>Black pepper</td>
<td>506</td>
<td>8.10</td>
<td>7.62</td>
<td>502</td>
<td>89.7</td>
</tr>
<tr>
<td>15.</td>
<td>Kashar Cheese</td>
<td>101</td>
<td>1.62</td>
<td>1.52</td>
<td>100</td>
<td>88.7</td>
</tr>
<tr>
<td>16.</td>
<td>Olive Oil</td>
<td>94</td>
<td>1.50</td>
<td>1.41</td>
<td>93</td>
<td>85.5</td>
</tr>
<tr>
<td>17.</td>
<td>Mutton</td>
<td>94</td>
<td>1.50</td>
<td>1.41</td>
<td>94</td>
<td>85.1</td>
</tr>
<tr>
<td>18.</td>
<td>Salt</td>
<td>536</td>
<td>8.58</td>
<td>8.07</td>
<td>525</td>
<td>84.6</td>
</tr>
<tr>
<td>19.</td>
<td>Eggplant</td>
<td>92</td>
<td>1.47</td>
<td>1.38</td>
<td>92</td>
<td>84.1</td>
</tr>
<tr>
<td>20.</td>
<td>Rice</td>
<td>87</td>
<td>1.39</td>
<td>1.31</td>
<td>87</td>
<td>81.6</td>
</tr>
<tr>
<td>21.</td>
<td>Onion</td>
<td>483</td>
<td>8.90</td>
<td>8.37</td>
<td>545</td>
<td>78.7</td>
</tr>
<tr>
<td>22.</td>
<td>Milk</td>
<td>80</td>
<td>1.28</td>
<td>1.20</td>
<td>80</td>
<td>78.0</td>
</tr>
<tr>
<td>23.</td>
<td>Fish Products</td>
<td>79</td>
<td>1.26</td>
<td>1.18</td>
<td>79</td>
<td>77.3</td>
</tr>
<tr>
<td>24.</td>
<td>Granulated Sugar</td>
<td>69</td>
<td>1.10</td>
<td>1.04</td>
<td>69</td>
<td>71.7</td>
</tr>
<tr>
<td>25.</td>
<td>Red Pepper</td>
<td>66</td>
<td>1.06</td>
<td>0.99</td>
<td>65</td>
<td>70.3</td>
</tr>
<tr>
<td>26.</td>
<td>Bread</td>
<td>64</td>
<td>1.02</td>
<td>0.96</td>
<td>64</td>
<td>68.6</td>
</tr>
<tr>
<td>27.</td>
<td>Others</td>
<td>1300</td>
<td>20.76</td>
<td>21.8</td>
<td>1297</td>
<td>—</td>
</tr>
</tbody>
</table>

* Shown = (Product Frequency / Total product number) x 100
** Processed = (Product Case number / Total product case number) x 100
*** The Product's number of usage in total documents reviewed
**** Shows the used products' level of significance

Source: prepared by the author based upon the empirical data.

When the frequency distributions of the data in Table 2 are reviewed, the highest distribution is seen in salt, black pepper, onion, oil, tomato, beef, butter and garlic. However, the order of the used products changes when distributions are examined according to the TF-IDF value. Hence, the frequency values are given in a mixed form.

### Table 3: Milk and Dairy Products used in the Main Dishes of the Turkish Cuisine

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Kashar Cheese</th>
<th>Milk</th>
<th>Yogurt</th>
<th>White Cheese</th>
<th>Curd Cheese</th>
<th>String Cheese</th>
<th>Buttermilk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shown (%)</td>
<td>38.58</td>
<td>29.96</td>
<td>22.85</td>
<td>3.37</td>
<td>3.37</td>
<td>1.5</td>
<td>0.37</td>
</tr>
</tbody>
</table>

Source: prepared by the author based upon the empirical data.

¹ In the study, the products of tomato paste (tomato paste as tomato) used in all the main dishes were evaluated considering their raw materials. The tomato and tomato paste used were given together. The same condition was applied for pepper paste as well.
Meat and meat products

It can be said that meat and meat products have an important place among the popular products in Turkish cuisine. This importance is clearly shown in Table 4. It is also supported by the use of 605 meat and meat products in a total of 767 main dishes. Table 4 shows that the use of beef has the highest rate with 39.33%. It is seen that chicken meat comes in second with 18.65%.

Mutton is in the third place with 15.8%. In addition, when we consider this distribution as red meat (calf, sheep, lamb, etc.), white meat (chicken, turkey) and white meat (aquaculture products), it is seen that the highest distribution is in red meat again.

The reason for this is that fish species are too many and they are in low frequencies. When we examine the content of fish products, they consist of anchovy, gray mullet, bonito, sea bass, bluefish, mackerel, trout, sardine, caviar, swordfish, gurnard, carp, tuna, sturgeon and gilt-head bream. Other products are minced meat, sausage, soujouk and grilled mutton intestine.

Table 4: Milk and Meat Products used in the Main Dishes of the Turkish Cuisine

<table>
<thead>
<tr>
<th></th>
<th>Beef</th>
<th>Chicken Meat</th>
<th>Mutton</th>
<th>Fish Species</th>
<th>Lamb</th>
<th>Turkey</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>234</td>
<td>111</td>
<td>94</td>
<td>79</td>
<td>45</td>
<td>31</td>
<td>11</td>
</tr>
<tr>
<td>Shown (%)</td>
<td>39.33</td>
<td>18.65</td>
<td>15.8</td>
<td>12.00%</td>
<td>6.00%</td>
<td>4.10%</td>
<td>1.80%</td>
</tr>
</tbody>
</table>

Source: prepared by the author based upon the empirical data.

Egg

“Chicken Eggs”, which are close to meat and meat products in terms of the nutritional elements they contain, were used 178 times in main dishes.

Dried legumes and oil seeds

Dry legumes and oilseeds were used 100 times in the main dishes discussed in the study. As given in Table 5, chickpeas had the highest usage rate with 28%. They were followed by walnuts and october beans with 12%, pine nuts and broad beans with 11%, dry beans with 9%, pine kernels with 7%, green lentils with 6% and lentils with 4%. When dry legumes and oilseeds are considered separately under the same title, dry legumes are seen to have the highest usage rate with 70%.

Bread and other grains

As shown in Table 6, bread and other grains were used 242 times. Among these usages, rice has the highest value with 35.95%. Rice is followed by bread with 25.21% and bulgar with 17.36%.

Table 5: Dry Legumes and Oil Seeds used in the Main Dishes of the Turkish Cuisine

<table>
<thead>
<tr>
<th></th>
<th>Chickpea</th>
<th>Walnuts</th>
<th>October Beans</th>
<th>Pine Nuts</th>
<th>Broad Bean</th>
<th>Dry Bean</th>
<th>Pine Kernels</th>
<th>Green Lentil</th>
<th>Lentil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>28</td>
<td>12</td>
<td>12</td>
<td>11</td>
<td>11</td>
<td>9</td>
<td>7</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Shown (%)</td>
<td>28</td>
<td>12</td>
<td>12</td>
<td>11</td>
<td>11</td>
<td>9</td>
<td>7</td>
<td>6</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: prepared by the author based upon the empirical data.

Table 6: Bread and Other Grains used in the Main Dishes of the Turkish Cuisine

<table>
<thead>
<tr>
<th></th>
<th>Rice</th>
<th>Bread</th>
<th>Bulgar</th>
<th>Crumbs Bread</th>
<th>Flat Bread</th>
<th>Corn Flour</th>
<th>Corn</th>
<th>Crumb</th>
<th>Macaroni</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>87</td>
<td>61</td>
<td>42</td>
<td>22</td>
<td>10</td>
<td>8</td>
<td>6</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Shown (%)</td>
<td>35.95</td>
<td>25.21</td>
<td>17.36</td>
<td>9.09</td>
<td>4.13</td>
<td>3.31</td>
<td>2.48</td>
<td>1.24</td>
<td>1.24</td>
</tr>
</tbody>
</table>

Source: prepared by the author based upon the empirical data.

Vegetables and fruits

When we check Table 7, we see the importance of vegetables and fruits in terms of the Turkish culinary culture. In particular, the excessive number of the used vegetables is noteworthy. Vegetables and fruits used in the main dishes consist of 2335 products in total. This comprises 38.69% of the ingredients used in the main dishes. Onions are the most commonly used vegetable. When given in order, onions are used with 19.68%, tomatoes with 15.53% and other vegetables with 11.4%. Other vegetables include green beans,
allspice, oranges, purslane, chard, leek, white cabbage, currants, coconut, stinging nettle, lettuce, spinach, black cabbage, apricot, celery, vine leaves, okra, peas, peppers, cowpea, brussel sprouts, charliston pepper, bay leaf, bell pepper, bell pumpkin, apple, artichoke and plum.

Table 7: Vegetables and Fruits used in the Main Dishes of the Turkish Cuisine

<table>
<thead>
<tr>
<th>Products</th>
<th>Frequency</th>
<th>Shown (%)</th>
<th>Products</th>
<th>Frequency</th>
<th>Shown (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Onion</td>
<td>483</td>
<td>19.68</td>
<td>Long Green Pepper</td>
<td>117</td>
<td>4.81</td>
</tr>
<tr>
<td>Tomato</td>
<td>386</td>
<td>15.53</td>
<td>Carrot</td>
<td>115</td>
<td>4.71</td>
</tr>
<tr>
<td>Other Vegetables</td>
<td>327</td>
<td>13.2</td>
<td>Dill</td>
<td>107</td>
<td>4.58</td>
</tr>
<tr>
<td>Garlic</td>
<td>222</td>
<td>9.11</td>
<td>Eggplant</td>
<td>92</td>
<td>3.85</td>
</tr>
<tr>
<td>Parsley</td>
<td>195</td>
<td>8.15</td>
<td>Scallion</td>
<td>71</td>
<td>3.04</td>
</tr>
<tr>
<td>Lemon</td>
<td>185</td>
<td>7.82</td>
<td>Mushroom</td>
<td>55</td>
<td>2.05</td>
</tr>
<tr>
<td>Potato</td>
<td>130</td>
<td>5.36</td>
<td>Pumpkin</td>
<td>54</td>
<td>2.01</td>
</tr>
</tbody>
</table>

Source: prepared by the author based upon the empirical data.

Table 8: Oils used in the Main Dishes of the Turkish Cuisine

<table>
<thead>
<tr>
<th>Oil</th>
<th>Frequency</th>
<th>Shown (%)</th>
<th>Butter</th>
<th>Frequency</th>
<th>Shown (%)</th>
<th>Olive Oil</th>
<th>Frequency</th>
<th>Shown (%)</th>
<th>Neroli Oil</th>
<th>Frequency</th>
<th>Shown (%)</th>
<th>Tail Fat</th>
<th>Frequency</th>
<th>Shown (%)</th>
<th>Tallow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil</td>
<td>403</td>
<td>55.2</td>
<td>224</td>
<td>30.68</td>
<td>94</td>
<td>12.89</td>
<td>5</td>
<td>0.68</td>
<td>3</td>
<td>0.41</td>
<td>0.14</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: prepared by the author based upon the empirical data.

- Sweets and Desserts
  They are mostly used for adding flavour to main dishes. All of the products used in this group consist of sugar.

- Others
  As seen in Table 9, spices constitute the majority. It is observed that salt has the highest usage rate with 35.74%. Black pepper, which is found complementary to meals, has a usage of 35.43%. Thirdly, red pepper is used with 8.08%. Chicken broth, meat broth and boiled meat juice are among the broths used. Other spices are basilicum, clove, basil and sage. Curry sauce, mustard, soy sauce, mayonnaise, pomegranate syrup, ketchup and tahini are the other nutritional elements.

Table 9: Other Products used in the Main Dishes of the Turkish Cuisine

<table>
<thead>
<tr>
<th>Products</th>
<th>Frequency</th>
<th>Shown (%)</th>
<th>Products</th>
<th>Frequency</th>
<th>Shown (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salt</td>
<td>539</td>
<td>35.74</td>
<td>Vinegar</td>
<td>42</td>
<td>2.82</td>
</tr>
<tr>
<td>Black Pepper</td>
<td>508</td>
<td>35.43</td>
<td>Cumin</td>
<td>37</td>
<td>2.52</td>
</tr>
<tr>
<td>Red Pepper</td>
<td>123</td>
<td>8.08</td>
<td>Mint</td>
<td>34</td>
<td>2.31</td>
</tr>
<tr>
<td>Bay Leaf</td>
<td>45</td>
<td>3</td>
<td>Broths</td>
<td>29</td>
<td>1.97</td>
</tr>
<tr>
<td>Thyme</td>
<td>44</td>
<td>2.94</td>
<td>Cream</td>
<td>19</td>
<td>1.29</td>
</tr>
<tr>
<td>Other Spices</td>
<td>43</td>
<td>2.88</td>
<td>Others</td>
<td>49</td>
<td>3.33</td>
</tr>
</tbody>
</table>

Source: prepared by the author based upon the empirical data.

A total of 1512 nutritional elements were used. The majority of these usages consisted of salt and black pepper. 55.16% of the total nutritional elements used are comprised of spices. Among the spices used, the most common one is black pepper and then red pepper follows it. There are similarities among the other spices in terms of their numbers and rates of usage.

5 CONCLUSIONS

The distributions of 6047 products in the Turkish cuisine have been presented in terms of nutrient groups. Accordingly, the highest distribution among the nutrient groups belonged to the vegetable and fruit groups with 2335 products and this shows that the Turkish people gave importance to vegetable and fruit-based nutrition.

It was revealed that mostly beef, chicken meat and mutton were used within the group of meat and meat products in the Turkish cuisine. In addition, it also appeared that the consumption of red meat was very common among the Turkish people. In the group of bread and other grains, usage of rice, bread and bulgar came to prominence.

The country’s kitchens are home to many venues with all kinds of food. These venues had
positive/negative effects on the emergence of the places producing regional/local products. This leads to the differentiation of the products used in food and beverages of the cuisines of many countries. In this research, it is thought that the determination of the nutrient groups of the products used in the main dishes of the Turkish cuisine will make significant contribution to the relevant literature. As a result of this research, some general inferences can be made about the main dishes of the Turkish cuisine. These are:

- In the study, inverse document frequency analysis was used and the importance of the products used in main dishes were put in order.
- It also stands out that discovery is indispensable in all the areas for human beings and progresses in a cumulative way in the concept of kitchen.
- It is observed that the usage of the products known to be consumed in the past (horses, carcass, blood, koumiss, pork, wine, etc.) disappeared in the Turkish culinary culture over time.
- The distribution of the main dishes into the food groups emerged as a result of this study.
- Beef, butter, garlic, tomatoes, lemons, parsley, oil, eggs, potatoes, green peppers, carrots, chickens, dill, black pepper, kashar cheese and olive oil were found to be among the prominent products used for cooking the main dishes.
- Among the nutrient groups, vegetables and fruits have the highest distribution with 2335 products, and other products come in second with 1512 products.
- It was determined that a main dish consisted of 8 (8.16) products.
- It was witnessed that living conditions and religious beliefs affected the Turkish culinary culture.
- It is seen that the culinary culture of each society is shaped according to the religious belief of the locality, geographical conditions, agricultural characteristics, socio-economic conditions and interaction with other societies.

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