

## FISHERIES FOOD INDUSTRY OF ÇANAKKALE

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**Abstract:** Çanakkale, which is located between Aegean and Marmara Seas, is an important city of Turkey in terms of agriculture, livestock and fisheries. Çanakkale brings these sectors to high standards, due to its location in which main export routes, sea, air, and highways logistics easily accessible. Dardanelles, which is the migration route of fish, contributes to the economy in terms of aquaculture, fisheries, and intensive activities that are carried out in the province in terms of the enterprises where the fish are processed.

Seafood production in Çanakkale was 8,809 tons according to the 2016 data and a significant portion of the products are exported. The foreign market is mainly composed of EU countries. In Turkey, there are 96 plants which have EU approval number. Eight of these 96 plants are found in Çanakkale. In these plants, fresh chilled, frozen, canned, and marinated seafood are produced and directly exported. Çanakkale province has the potential to continue to develop especially in terms of processed seafood. It is thought that new businesses to be established in the region will provide significant gains for investors with sustainable aquaculture production.

**Keywords:** Çanakkale, seafood, regional development.

### Introduction

Canakkale is located south of the Marmara Region and it is very close to important industrial cities such as Istanbul, Bursa, and Izmir found in Turkey. Canakkale is one of the six cities which have seashores more than 2 seas. In terms of geographical, logistics, and strategic, the province is at a very important position that connects the transit route from Asia to Europe. As of 2016, in Canakkale Center and the other 11 districts, a total of 519000 people live that constitutes 0.65% of the total population of Turkey. Agriculture, animal husbandry and aquaculture production are among the most important livelihoods in the region. 35% of the total working population of Çanakkale province has employment in the agricultural field. A significant portion of the agricultural products produced in Çanakkale are exported and 33 million dollars of revenue is generated. The foreign market is mainly composed of countries such as Greece, Australia, Germany, UK, and USA.

In addition to agricultural products and animal husbandry, the province of Çanakkale is known for its high quality of aquaculture production. Due to its location, it is dominated by export routes and is easily accessible by sea, air, and highways and logistics makes this sector high standards. The presence of a large number of fish species on the migration route, the fact that the seas in which it is located very suitable for the hunting of other marine organisms, and the presence of inland waters, bays, and pastures are suitable for aquaculture production. Produced aquaculture products are processed in important seafood processing plants in the region with high technologic and quality standards and converted into high value-added products. In Turkey, including 96 EU approval number field processing plant of 8 units in located in Canakkale province, mainly produced in the processing plants, fresh chilled and frozen fish, canned fishery products, bivalve mollusks, products such as marine fisheries are sent directly to exports.

The abundance and diversity of fish and other aquaculture in the province of Çanakkale has had a significant impact on the production and consumption of aquaculture in the region. This effect has led to the formation of some traditional products and consumption patterns specific to Çanakkale from the past to the present. This traditional form of consumption, which has lasted for many years, provided the basis for the commercial and industrial production of these products. Previously, while

the technology has not been developed, salting, drying, and brine holding processes, which are preferred by the local people for the protection of aquaculture, are currently used in the enterprises as a food processing method and the products produced in this way take their place in the market. Among these products, the best examples are Gelibolu, Eceabat, and Lapseki districts, mainly produced, salted sardines, kippers, and lakerda (salted bonito) products. Besides these products, canned aquaculture products (ton, sand mussels, etc.) marinate, fish paste, mussels, stuffed mussels, shellfish, and other mollusk products take place both in our country and international markets.

### **Common Seafood in Canakkale**

In Çanakkale seafood culture is constituted by mainly fish, and sardines, especially, come to the fore among these. Besides, bonito, bluefish and horse mackerel with other fish, carpet shells, black mussels, squid, other shellfish and mollusks are abundantly caught during the season. Most of these products are offered for consumption as fresh and chilled, and a significant portion of the remaining products are processed by salting, marinade and canning technologies. Since the beginning of the 1900s, some of the small scale fish processing enterprises are continuing their traditional production today. Also, the transition to the industrial-scale processing phase was moved to a different dimension after Dardanel Önentaş Gıda Sanayi A.Ş. In the Dardanel company, where the exported products are also produced, mainly tuna is processed, as well as canned products such as mussels, sardines in recent years.

Most of the traditional and technological processed seafood produced in the Çanakkale region are mainly constituted with canned fish, salted sardine, salted bonito (lakerda), salted-dried mackerel, marinated anchovy, fish paste, and stuffed black mussels.

### **Canned Seafood**

In Turkey, the first fish canned was made in Gallipoli, and the first Turkish Fish Canned Factory was established in Gallipoli for sardine production. Consequently, for many years, small-scale family businesses have been producing canned fish in Gallipoli. “Kız Marka”, “Kızlı Sardalya” and “Güzel Kız” branded products are known and known traditional canned sardines. Currently, three small-scale family businesses in Çanakkale produce the product in question, and today, mainly tuna canned food is produced. One of the two big companies producing tuna in our country is located in Çanakkale and 9 thousand tons of the total canned production (around 12 thousand tons) is produced in Çanakkale.

### **Salted Seafood**

*Salted Sardine*; Sardines, which are commonly found in the Marmara and Aegean Sea in our country, are fatted in June-September and the fish caught are in high demand. Especially the fish caught from the North Aegean (Saroç Gulf) are called “Gallipoli sardines” because of the difference in flavor (Ormancı and Arık Çolakoğlu, 2014). During the fishing period, the sardine fishes brought to Gallipoli are salted and ripened in barrels for 2-3 months and the obtained aromatic salted product is consumed any time after matured. Salted sardines started to be produced in Çanakkale / Gallipoli for the first time since 1914. This product, which is still commercially produced by 3 small family businesses in Çanakkale, is widely produced and consumed by the local people. Traditionally, salted sardines are identical with Gallipoli, just like sardine fish, and are often referred to as “Gallipoli salty sardines”. In Gelibolu, enterprises producing salty sardines produce many kinds of salty sardines such as natural salty sardines, oiled salty sardines, and anchovies. Total commercial production in the region is between 1500-2000 tons.

*Lakerda (Salted Bonito)*; Lakerda is a product that is produced using bonito fish. The fish are cut into slices and purified from the blood and then salted and ripened in brine. Although this product, which was produced in Spain in the mid-14th century, was originally produced to prevent deterioration of fish and to increase its durability, it is recently produced to create a different flavor (Aksu, Uran & Varlık, 2013). In many small and large enterprises in Çanakkale and its districts, it is

widely used in lacquer production. Bonito, which migrate from the Black Sea to the Aegean Sea in autumn, are ripened in brine within 1-2 months and turned into a very valuable product. The low cost of production and the high sales price of the product make it attractive for businesses as well as local people to produce it at home.

*Kipper*; Kipper is known as salted and dried mackerel fish. After fish caught, they are salted with their complete form. After maturation, fish are removed from the salt and cleaned from the salt, viscera and if desired fishes are smoked before packaged. Kipper is produced in small scale enterprises in Çanakkale and its vicinity and it is also produced by the local people. In the production of fish, the blood removal process is applied first and then dried by salting. Although the traditional production is in the form of natural air drying, drying ovens or drying chambers are used in commercial production for fast, homogeneous and ideal drying.

### **Marinated Seafood**

It is produced by curing the edible parts of seafood by treating them with vinegar and salt at various rates without heat treatment (Özden and Varlık, 2004). There are wide variety seafood which are used in producing marinades such as, fish, shellfish and mollusks. Among these, anchovy marinades are the most important marinade products in point of total production and consumption rates. The number of establishments producing anchovy marinades is at least two in the region and companies are producing seasonal marinades. Especially at the end of the autumn season, the anchovy that migrated to the Sea of Marmara as a result of abundant fishing began to be produced in and around Çanakkale. In addition to industrial production, domestic production is very common due to its easy construction and low cost. Anchovy marinade is a product that the local people enjoy. Usually filled with vegetable oil, this product is filled with various sauces; pepper sauce, tomato paste, garlic, olives, such as the production.

*Fish and Seafood Pates*; It is a product which is prepared by crushing the fish fillet and adding the spices and auxiliary substances to give condiment (Arık Colakoglu et al., 2010). In addition to fresh fish, salty fish, marinated fish, and smoked fish are used in production. Tuna, anchovies, sardines, mackerel, trout can be produced from many kinds of fish and eggs from some fish. In the region of Çanakkale, fish and seafood pate are very popular. The seafood processing plants in the region produce fish pate sandwiches as well as fish pate products packaged in jar or tube packages.

*Stuffed Mussels*; Stuffed mussels are produced using black mussels, which are bivalve mollusks constituted dense populations in the shores of the Çanakkale region. After the cleaning process, it is produced by cooking and the stuffing mussels with rice and various spices. Stuffed mussels are very popular in Çanakkale as in other cities. The fame of the Çanakkale mussel stuffing is due to the large size of the mussels collected from the region, the high yields of meat and the delicious taste. Domestic production is quite high nowadays since almost every corner has mussels. Nowadays, only one company carries out its industrial production.

### **The financial position of seafood industry in Çanakkale**

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### **Possible Chances to Commence a Production or Improve the Current Situation**

An integrated production using aquaculture for new cultivable species and processing of cultivated species may be potent in this region. Due to high exploitation and risk in the sustainable production of raw material by fishing, is the most important obstacle in this sector. This problem will probably be the same position with its current importance in the near or further future. Hence,

aquaculture production and producing processed seafood using these cultivated products as a raw material may have a high-income potent in the future. Changing direction into sustainable production with small modification by time is thought to be useful for the present firms that use fisheries products instead of aquaculture. The government of Turkey has institutions that are ready to help on this issue and are currently active, and only programs that support the current situation of investors in this field in terms of technology and sustainable. Besides, there are grants programs for new investors.

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