

*Figen CUKUR<sup>1</sup>, Oktay CELİK*

## **ORGANIC OLIVE FARMING AND ITS FUTURE: A CASE STUDY FROM TURKEY**

### **SUMMARY**

Organic farming is significant in terms of sustainable farming practices in the world and Turkey. Organic farming has importance both for crop and livestock sustainable production for the future. Organic production includes that the produce product by healthy, hygienic and quality criteria. In this reason, demand of consumers is increasing to organic products day by day. Organic farming has a potential in Milas district of Mugla province. Especially, organic olive production and number of organic olive producers has increased in last years. In this study, first of all, organic farming applications will be searched as general of Milas District. Then, future of organic olive farming will be evaluated as various criteria. Also, problems and solutions of organic olive farming will be discussed.

**Keywords:** Organic farming, Olive, Milas, Turkey.

### **INTRODUCTION**

Organic farming, as a sustainable and environmental friendly production technique, is applied in subfields of both animal and plant production. Getting known both in Turkey and the world, organic farming is one of the most significant steps in agricultural sector for healthy food consumption. Because of the negative effects of food base sicknesses on consumers, interest of organic farm products have recently increased. Olive, cultivated for thousands of years, is a very important plant for human health and nutrition (GTHIM, 2014b). Turkey has an important role in the world in terms of olive population, table olive and olive oil production. Organic olive cultivation is a certified agricultural production method which is controlled from the production to consumption. In this method, environment, air, soil and water resources cannot be polluted, harmful chemical fertilizer and pesticide cannot be used, only the inputs defined in regulations can be used (Anonymous, 2009). In a research done in Aegean Region, it is determined that good performance and quality is provided by organic agriculture practices and conventional methods (Varol et al., 2008).

In the world, organic olive is cultivated in 576.041 ha. In the year of 2011, organic olive cultivation area increased with 7% (FIBL and IFOAM,

---

<sup>1</sup>Figen CUKUR, (corresponding author: figenc@mu.edu.tr), Mugla Sitki Kocman University, Milas Sitki Kocman Vocational School, Department of Management and Organization, Milas, MUGLA, TURKEY; Oktay CELİK, Milas District Directorate of Food, Agriculture and Livestock, Milas, MUGLA, TURKEY.

Paper presented at the 5<sup>th</sup> International Scientific Agricultural Symposium "AGROSYM 2014".  
Note: The authors declare that they have no conflicts of interest. Authorship Form signed online.

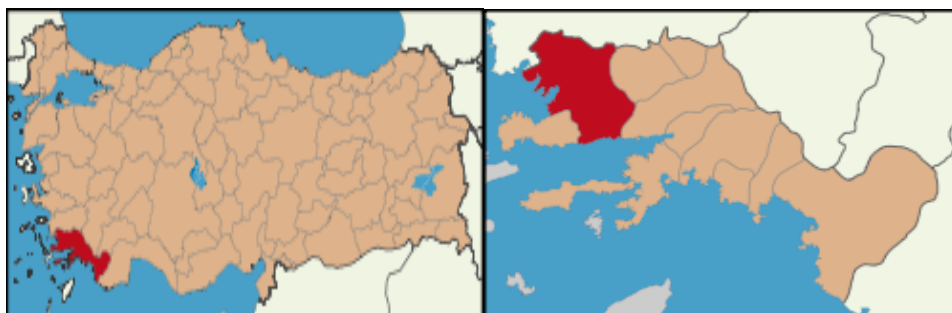
2014). Around the world organic market size between 1999 and 2011 increased with 12.58% in dollar denominated. When organic market size was 15.2 billion in 1999, it has reached to 62.9 billion in 2011 by increasing 4 times more. 29 billion dollar of the market is belonging to USA, 9.2 billion of it belongs to Germany and 5.2 billion of it belongs to France. 1.8 million Producers from 162 countries are engaged in organic farming on an area of half of Turkey. Total organic agricultural area reaches to 69.7 million hectare when certified areas of apiary and 32.5 million area of picking is included. Turkey has 1.2% of organic agricultural area in the world and listed as 12th. It is estimated that the share of Turkey in organic market is approximately 300-350 million dollars (TZOB, 2014).

By the data of 2012, total organic agricultural area of Turkey is 523.627 ha, this area is 2.16% of the total organic agricultural area in the world. Among the countries which show the highest yearly increase in organic agricultural area, Greece is at the top. The list respectively continues with Mexico, Kazakhstan and Turkey with 81.045 ha increase in 2012. In 2012, there were also significant increases of the number of the farmers doing organic agriculture in Turkey. The number was 57.259 producers. In 2009, Turkey gained 19.8 million Euro incomes from the export of organic products (FIBL and IFOAM, 2014). Including the adaptation period, organic agricultural product number of plant production is 153, and number of the producers is 60.797 in Turkey. Area of organic plant production is 769.014 ha, production amount is 1.620.466 tonnes. Export amount of organic products in 2013 is 10.495.217 kg, as a result of it 46.020.389 dollars export value has obtained (GTHB, 2012).

Mugla province has an important potential in Aegean region in terms of organic agricultural activities. According to data of 2010 provided by Ministry of Food Agriculture and Livestock, Aegean region become a leader of organic agriculture production as İzmir, Manisa and Mugla produce 81.900 tonnes organic products (Anonymous, 2011c). In the framework of the project of Ministry of Food Agriculture and Livestock called 'Popularization and Control of Organic Farming', organic production started by 47 farmers from Koycegiz has been planned for olive, pomegranate, citrus and various agricultural products (Anonymous, 2014a). In Mugla province, 89 farmers produced 2025.00 tonnes organic plant production on 2921.77 ha area by the year of 2012. Same year, organic olive production comprised of 27.43% of the organic plant production (555.51 tonnes). 116 farmers who are at their adaptation period in Mugla produced 1721.52 tonnes on 1386.52 ha area in 2012. (GTHB, 2012). In accordance with the data of 2014, 65 different types of organic products are being produced by 840 farmers on 102.521 decares area. Organic agricultural activities have been started in 2 villages of Mugla. Besides, one village of Datca and one village of Koycegiz have started organic agricultural activities. In addition to this, organic apiculture activities continue with 2529 hives. Two different areas are detected for accommodation of organic apiarists by a project carried out in Mugla province Datca district (GTHB, 2014).

Having three thousand-year past in Mugla, almost 35.000 farmers make their living from curative olive and olive oil (Anonymous, 2012a). 700 farmers are engaged with organic farming in Milas district which is a leader of Mugla province in terms of agricultural potential (Anonymous, 2013b). There are plenty of local producers doing agriculture with native races on areas which are not polluted by chemicals (GTHB, 2014).

Mugla province Milas district is one of the most important olive and olive oil production centres of Aegean region and Turkey (Fig.1a and Fig.1b). Milas district has approximately 10% of the olive trees in Turkey. Milas district contributes the most to olive production among the other districts of Mugla. There are also 1.000.000 unrecorded olive trees in Milas district. By 2013, there are 8.550.000 fruitful olive trees, 250.000 fruitless olive trees on 53.300 da area, and totally there are 8.800.000 olive trees in Milas district. In 2012, 32.492 tonnes olive was produced (TUIK, 2012). In 2013, 17.000 tonnes grain olive, 1.700 tonnes table olive and 65.000 tonnes olive for oil purpose were produced. Olive oil production amount was 13.000 tonnes in 2013 (GTHIM, 2014a).



Source: Anonymous, 2014b, <http://tr.wikipedia.org/wiki/Milas>

Figure 1. a) Mugla Provinc

b) Milas District

## MATERIAL AND METHODS

Main material of this study is formed by the data obtained from Food and Agriculture Organization (FAO), Turkish Statistical Institute, Ministry of Food Agriculture and Livestock, Milas District Food Agriculture and Livestock Directorate. In addition, related researches, reports, thesis, articles and statements are the other resources that are used. Subject related personal interviews with the experts were used, as well. SWOT analysis is used in order to assess the future of organic olive farming in Milas district. With the help of the analysis; strengths, weaknesses, opportunities and threats of organic olive farming in Milas were discussed.

### Current Structure and Situation of Organic Olive Farming

Organic agricultural activities have been accelerated in 2013 in Milas district. Among the organic agricultural activities of the region, olive cultivation comes into prominence. In especially recent years, there have been significant developments about organic olive cultivation in the district. By the year of 2013,

508 farmers registered for organic agricultural adaptation process. Total area of organic olive cultivation is 30.000 da. By the year of 2014, 200 farmers registered for organic agriculture in Milas district. 13 farmers from the district benefit from active organic agriculture support. By 2014, total area of organic olive cultivation is 15.000 da (GTHIM, 2014a).

### **Activities for Organic Olive Farming**

In Milas, farms producing olive do conventional production, there is no farms doing certified organic agricultural production. It is determined that organic agriculture activities can be carried out only for last two years in Milas district which has plenty of proper organic agricultural area as its geographical features. Some of these reasons can be stated as to produce clean and safe, qualified and branded products, to create new markets and employment area and to intend for registration of the already organic area as it is rugged terrain and non-chemical (Celik, 2014).

After completion of the feasibility study for the project that aims to develop 'organic agriculture' and 'agro-eco tourism' in Milas district, 10 farmers are certified located in villages Kuzyaka, Gökceler, Karapınar, Alacam, Beyciler, Balçılar, Demirciler, Kısırlar, Hasanlar and Söğütcük. In the scope of 'Milas Rural Development Project' that is a collaborative support of Ministry of Food Agriculture and Livestock and Government of Spain to develop 'organic agriculture' and 'agro-eco tourism', olive cultivation and organic agriculture adaptation process has been started in the region (Anonymous, 2012b).

In the framework of organic agriculture project located in Camseki region and Gokceler valley between Milas and Bodrum, olive cultivation activities have been carried out which is quite important for the production variety of the region (Anonymous, 2011a). With the help of the project that is designed, integrating of organic agriculture it is aimed that these two demo regions called Camseki region and Gokceler valley can be used for production area without harming the environment and income of the local people can be increased by making these regions productively active (Anonymous, 2011b).

Olive cultivation done in Milas district is also in the scope of organic farming as there is no usage of fertilizers or pesticide. However the region is not certified. In order to fill the gap, there is a contract office for the farmers who are engaged with organic agriculture. This office constitutes a bridge between farmers and the certificate institution; and help farmers to get a certificate by guiding them (Anonymous, 2013a).

### **Future of Organic Olive Farming with SWOT Analysis**

Organic olive farming can be seen as a quite new agricultural activity for Milas district. In the studies done in 2013 and 2014, it can be said that organic olive farming has accelerated. Besides of all these developments, organic olive cultivation has some strengths and weaknesses; opportunities and threats (Table 1). Determining these factors elaborately is quite important for organic olive cultivation to provide sustainability and carry it into future.

Table 1. SWOT Analysis

<b>Strengths</b>	<b>Weaknesses</b>
<ol style="list-style-type: none"> <li>1. Limited usage of pesticide</li> <li>2. Request of the producers to do organic agriculture</li> <li>3. Proper ecosystem for organic olive farming</li> <li>4. Knowledge and experience levels of the local producers about olive farming</li> <li>5. Convenient geography for investment</li> <li>6. Presence of the sample businesses that are able to do organic olive farming</li> <li>7. Sufficiency of the climate and the soil conditions</li> </ol>	<ol style="list-style-type: none"> <li>1. Limited research and development studies and insufficient practices of its results</li> <li>2. Tendency of the youth to work at tourism sector as the characteristic of the region</li> <li>3. Insufficient communication of the farmers with the related institutions</li> <li>4. Low participation levels of the farmers to the meeting organized by public establishments</li> <li>5. Marketing problems of conventional olive production and absence of efficient marketing channels</li> <li>6. Lack of promotion</li> </ol>
<b>Opportunities</b>	<b>Threats</b>
<ol style="list-style-type: none"> <li>1. Presence of certification office</li> <li>2. Its close distance to tourism centers</li> <li>3. Its close distance to Izmir and Mugla</li> <li>4. Presence of Milas-Bodrum International Airport</li> <li>5. Increasing demand for organic products in the region</li> <li>6. Presence of farmers market on each day of the week</li> <li>7. Increasing demand for Agro-eco tourism and health tourism</li> <li>8. Collaboration between partners</li> <li>9. Effectiveness of the producers organizations</li> <li>10. Application for geographical mark incorporation certification</li> </ol>	<ol style="list-style-type: none"> <li>1. Lack of confidence of the consumers for organic products</li> <li>2. Income concern of the farmers compared to conventional production</li> <li>3. Inability of switching into organic from conventional production</li> <li>4. Insufficient knowledge of the farmers for the adaptation process</li> <li>5. Close distance of some agricultural areas to highways or vehicle traffic</li> </ol>

Strengths of the organic olive farming in Milas are as follows; limited usage of pesticide, request of the producers to do organic agriculture, proper ecosystem for organic olive farming and knowledge and experience levels of the local producers about olive farming; convenient geography for investment, presence of the sample farms that are able to do organic olive farming, sufficiency of the climate and the soil conditions.

On the other hand, the weaknesses can be listed as; limited research and development studies and insufficient practices of its results, tendency of the youth to work at tourism sector as the characteristic of the region, insufficient communication of the farmers with the related institutions, low participation levels of the farmers to the meeting organized by public establishments, marketing problems of conventional olive farming, absence of efficient marketing channels and lack of promotion.

In contrast with, there are also some opportunities of organic olive farming like; presence of certification office, its close distance to tourism centers, Izmir and Mugla, wide variety of marketing opportunities, presence of Milas-Bodrum International Airport, increasing demand for organic products in the region,

presence of farmers market on each day of the week, increasing demand for Agro-eco tourism and health tourism, collaboration between partners, effectiveness of the producers organizations and application for geographical mark incorporation certification.

Lack of confidence of the consumers for organic products, income concern of the farmers compared to conventional production, inability of switching into organic from conventional production, insufficient knowledge of the farmers for the adaptation process, close distance of some agricultural areas to highways or vehicle traffic can be assessed as the threat factors of organic olive farming.

## **RESULTS AND DISCUSSION**

There are so many factors for organic olive and organic olive oil production and marketing in Milas. Natural beauties, climate and flora of Milas are among the biggest opportunities for organic olive farming. The other important factor is the presence of Milas-Bodrum International Airport for International and domestic marketing of organic olive and olive oil. On the other hand, olive is the most significant agricultural product of the region, however its promotion and presentation is not sufficient to create an identity for the Milas district (Cakır, 2009). Inability to create brand of the local olive and olive oil is a big problem of the region. Proper presentation (International, national and local fairs, conferences, workshops, panels and related exhibitions etc.) and advertisement activities would be important steps. In addition, efforts to get geographical incorporation certificate of Milas olive gain importance at this step.

When the effective factors are analyzed in transfer of the farms from conventional to organic production, it is seen that financial factors are much more influential. Hence, it is specified that businesses can switch into organic production in a case of marketing a high price product easily and more guaranteed (Olgun et al., 2008). In another study, very similar result has been obtained and it is concluded that most important factors to decide organic olive farming are financial reasons. It is determined that a farmer who wants to do organic olive farming must have high income levels, to have at least one tractor and a plough, to have the agricultural area as a property, to get informed from formal resources and to know related legal regulations (Koksal, 2009).

Besides of supplying proper market for the farmers, supplying market guarantee, having increased knowledge levels, having sufficient tools and equipment and adoption of olive farming conditions will contribute a lot to transfer of organic olive farming in Milas. Organic olive farming is not only advantageous for farmers; but also for olive oil pressing plants. In a research, yield co efficiency which is defined as a rate of olive amount and olive oil is much more in organic olive oil. Wastage rate is also less in organic agriculture (Olgun et al., 2011). Even though high cost levels can be seen in short term, businesses may turn into profitable companies in long term.

## CONCLUSIONS

In conclusion, clean, reliable, qualified and branded products would popularize organic agriculture in Milas. Therefore, good quality olive oil will be produced. Certified and retrospectively- traceable production system model will be developed. Environment friendly practices can be done. Some of the greatest harms of chemical fertilizers such as salinity, heavy metal contamination, water quality, deterioration of natural water habitat, nitrate accumulation in waters and increasing carcinogenic factors will be disappeared. Popularization of organic olive farming will also help the transfer of the other plant products cultivated around the region from conventional to organic farming. New marketing opportunities particularly in organic markets will appear for olive and olive oil. Popularization of organic agriculture will also create new employment areas (Celik, 2014). Therefore, organic olive farming will provide added value for businesses in Milas at micro base, then for Mugla and national economy at macro base.

## REFERENCES

- Anonymous, 2009. Organic Olive Farming-I, <http://www.zeytinportali.com/article/97/organik-zeytin-yetistiriciligi-1.aspx>, December 22, Accessed date: 02.07.2014.
- Anonymous, 2011a. Organic Agriculture in Milas, <http://www.zeytinagacidergisi.com/milas-organik-tarima-geciyor/>, February 28, Accessed date: 02.07.2014.
- Anonymous, 2011b. Organic Agriculture for 10 Villages in Milas, [http://www.gidatarim.com/HABERLER/14915\\_Milasta-10-koy-organik-tarima-geciyor.html](http://www.gidatarim.com/HABERLER/14915_Milasta-10-koy-organik-tarima-geciyor.html), February 28, Accessed date: 02.07.2014.
- Anonymous, 2011c. Leader of Organic Agriculture: Aegean Region, <http://www.yeniasir.com.tr/Ekonomi/2011/09/03/ege-organik-tarimin-lideri>, Accessed date: 01.08.2014.
- Anonymous, 2012. 3-thousand-yearhealth source: Olive, <http://ekonomi.bugun.com.tr/3-bin-yillik-sifa-kaynagi-haberi/215756>, 17 Aralık, Accessed date: 02.07.2014.
- Anonymous, 2012. Organic Certificate for Organic Farmers <http://www.sondakika.com/haber-organik-ciftcilere-organik-sertifika-3576083/>, Accessed date: 11.07.2014.
- Anonymous, 2013a. Organic Agriculture Attack in Milas, <http://www.gunaydinmilas.com/milasta-organik-tarim-atagi/>, July 5, Accessed date: 30.06.2014.
- Anonymous, 2013b. Organic Agriculture in Milas, <http://www.haberler.com/milas-ta-organik-tarim-5283770-haberi/9>, November, Accessed date: 30.06.2014.
- Anonymous, 2014a. Settling of 'Organic Village' in Mugla, [http://www.tarimtv.gov.tr/HD4809\\_mugla-da-organik-koy-kuruluyor.html](http://www.tarimtv.gov.tr/HD4809_mugla-da-organik-koy-kuruluyor.html), June 9, Accessed date: 30.06.2014.
- Anonymous, 2014b. <http://tr.wikipedia.org/wiki/Milas>, Accessed date: 11.07.2014.
- Cakır, G., 2009. About Milas, <http://milas2010-2025.blogspot.com.tr/2009/12/milas-hakkinda.html>, December 21, Accessed date: 02.07.2014.
- Celik, O., 2014. Personal Interview, Milas District Food, Agriculture and Livestock Directorate, Accessed date: 10.07.2014.

- FIBL, IFOAM, 2014. The World of Organic Agriculture, Statistics and Emerging Trends 2014, <https://www.fibl.org/fileadmin/documents/shop/1636-organic-world-2014.pdf>, p.302, Accessed date: 02.07.2014.
- GTHB (Ministry of Food Agriculture and Livestock), 2012. Organic Agriculture Statistics for the years between 2002 - 2012, <http://www.tarim.gov.tr/Konular/Bitkisel-Uretim/Organik-Tarim/Istatistikler>, Accessed date: 03.07.2014.
- GTHB (Ministry of Food Agriculture and Livestock), 2014. Agriculture Investment Guide of Mugla Province, The Presidency of Strategy Development, Agricultural Investor Information Office, January, Accessed date: 09.07.2014.
- GTHIM (Milas District Directorate of Food, Agriculture and Livestock), 2014a. Various Statistics, Accessed date: 01.07.2014.
- GTHIM (Bayindir District Directorate of Food, Agriculture and Livestock), 2014b. Olive Cultivation, Bayindir District Directorate of Food, Agriculture and Livestock <http://www.bayindirtarim.gov.tr/index.php/bitkisel-ueretim/6-zeytin-yetistiriciligi.html>, Accessed date: 02.07.2014.
- Koksal, O., 2009. The Analysis of Factors Which Are Effective On Decision Making Behavior For Organic Olive Cultivation, PhD Thesis, Ankara University, Institute of Science, Department of Agricultural Economics, Ankara, 188p.
- Olgun, A.F., Artukoglu, M.M., Adanacioglu, H., 2008. Research On The Tendencies Of Conventional Olive Producers To Convert To Organic Olive Production, Ege University, The Journal of Ege University, Faculty of Agriculture, 45 (2): 95-101.
- Olgun, A.F., Artukoglu, M.M., Adanacioglu, H., 2011. Profitability and Efficiency of Olive Oil Mills in Turkey: The Case of Ege Region, Ege University, The Journal of Ege University, Faculty of Agriculture, 48 (3): 217-227.
- TUIK (Turkish Statistical Institute), Mugla with Selected Indicators 2012, <http://www.tuik.gov.tr/ilGostergeleri/iller/MUGLA.pdf>, Accessed date: 11.07.2014.
- TZOB (Union of Turkish Chambers of Agriculture), 2014. Bright Future of Organic Agriculture, <http://www.tzob.org.tr/Bas%C4%B1n-Odas%C4%B1/Haberler/ArtMID/470/ArticleID/879/Organik-tar%C4%B1m%C4%B1n-gelece%C4%9Fi-parlak>, Accessed date: 09.07.2014.
- Varol, N., Alper, N., Koseoglu, O., Topuz, H., Ozaltas, M., Pekcan, T., Turan, H.S., Gumusay, B., Erten, L., Ozturk, F., Irmak, S., Ataol Olmez, H., Akdogan, G., 2008. Organic Olive Cultivation in Aegean Region, Aquaculture Central Research Institute, <http://www.zae.gov.tr/index.php/projeler/sonuclanmis-projeler/174-yayin-no-129-174>, Accessed date: 02.07.2014.