



Organic Plant Production in Kocaeli /Turkey and Proposals for Growth of Organic Plant Farming

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Abstract

Organic agricultural production is targeted to be 8% in Turkey in 2020. In this context there are governmental supports for organic agricultural producers such as direct income support, product based support and support for the producers who enter the Protection of Agricultural Land for Environmental Purposes Programme. Although Kocaeli is mostly known as an industrial province, the province has considerable potential for agricultural plant production via temperate climate and generous land. In the city there are total of 93852.1 ha cultivated area consisted of vegetable plantation, fruit orchards and crops fields. The increase of organic agricultural plantations in the city will help protection of agricultural land, water and soil resources. In addition, agricultural-based pollution will be reduced through the legal control of inputs in organic farming. According to the data of the year 2017, there are totally 9 registered organic plant producer farmers in Kocaeli. 2 of them are certified organic plant producers, the other 2 of them are in both organic and transition period and the remaining 5 farmers are only in the status of transition period. The 9 registered organic plant farmers carried out their plant production in 9 different villages in Kandıra, Gebze, Karamürsel, Gölcük, Körfez and İzmit districts in Kocaeli. They produce different kind of crop, vegetables and fruit on a commercial scales. In this study some suggestions are made for the increase of organic plant production for the city by considering the latest organic plant production data obtained from Kocaeli Provincial Directorate of Ministry of Food Agriculture and Livestock.

Key words: Organic farming, Kocaeli, Turkey, 2017

INTRODUCTION

Kocaeli province is between 29°22'-30°31' Eastern longitude, 40°31'-41°13' Northern latitude, surrounded by Istanbul, Bursa, Yalova and Sakarya Provinces in addition The İzmit Gulf and The Black Sea (Fig. 1). The surface of the province of Kocaeli is 3505 km² and located on an important crossroad binding Asia to Europe. The gulf coasts and The Black Sea coasts are mild and the higher regions have a harsher climate. It can be said that the climate of Kocaeli is a transition between Mediterranean and Black Sea climate [1]. With its natural and human resources, Kocaeli is one of the unique cities for industry. When we look at the shares of the sectors within the economy of Kocaeli; agriculture has 3%, industry has 70%, service sector has 27% of total. Agricultural land of the city is 149703.6 ha (43.77% of total land). 93852.1 ha of this area is cultivated. Rest of the agricultural land is not under processed. The conventionally cultivated areas mostly shares well known cereals (wheat, barley, oats, triticale, maize etc.), legumes (chickpea, dry beans etc.), industrial and the other field crops (sunflowers, potatoes, onion etc.) and feed crops (cereals and legumes). Under open field condition; table tomato, pepper, watermelon, fresh bean, melon, aubergine, spinach, white cabbage, winter squash, fresh onion, curly lettuce, summer squash, bell pepper, paste pepper, iceberg lettuce, cucumber, paste tomato, fresh reddish bean, fresh broad bean, fresh pea are share the first twenty in vegetable. Under greenhouse condition; cucumber, lettuce, tomato, fresh onion, parsley, red cabbage, iceberg lettuce, purslane, rocket, bell pepper, are share top ten in vegetables. At the same time fruits and berries growing is carried out. Hazelnut, cherry, walnut, pear, plum, peach, grape, quince, apple starking, apple golden, sweet chestnut, the other cultivar of apples, fig, sour cherry, kiwi, strawberry, nectarines, persimmon, raisins, pomegranate share the first twenty fruits [2]. Despite all this environmental compliance, organic farming is very slow increasing in Kocaeli.

On the other hand organic agricultural production is targeted to be 8% in Turkey in 2020 [3]. Each city has responsibilities to rise the this goal. In this paper, organic plant production in Kocaeli province in 2017 was revealed and some suggestions for increasing in organic plant production are made.

Figure 1. Kocaeli districts



MATERIALS AND METHODS

The paper is fully based on limited existing data of The Ministry of Food, Agriculture and Livestock of Turkey and The Governorship of Kocaeli of The Republic of Turkey. In addition organic field visit and conversation with organic farmer/holdings and with the President of Kocaeli Ecological Life Association and observation the natural resources helped to finalized.

RESULTS AND DISCUSSION

Organic crop production data in Turkey

Since the mid 1980s, organic agriculture in Turkey has begun to be exported in the form of contracted agriculture, pioneered by European organic farming firms. The first products were dried figs, dried apricots, raisins and hazelnut [3]. In Turkey, the first official organic farming movement began in 1992 with the establishment of the "Association of Ecological Agriculture Organization". The production, which was carried out in accordance with the legislation of the importing countries in first place, was carried out in crop production after 1991 and later in livestock production in 1999 based on Council Regulation No 2092/91 of the European Union. In 1990s with the commercialization of organic products all over the world, from national production to marketing, a national legislation was become a necessity. In 1994, 2002, 2004, 2005 and 2010 official regulations were revised and updated to European Union legislation [4]. At present "Organic Agricultural Principles and Implementation Regulation" (first release date August, 18, 2010; Official gazette number: 27676) is used (with some official regulation amendment in 2011, 2012, 2013, 2014, 2015, 2018) [5].

According to organic plant data; 214 crops grown organically by 75067 farmers/holdings in 543033 ha cultivated land and wild production areas. Production quantity is 2406606 tonnes in 2017 in Turkey (Table 1) [6,7].

Organic crop production data in Kocaeli

The official data that we reached on organic and transition period crop production in Kocaeli is from 2002 until the day. In the first two years (2002, 2003) only hazelnut

growing attracts attention. After the years number of crops started to increase rapidly. In 2017 there are 72 crop under organic growth and 71 crop under transition periods. When considered that most of the crop are both in organic and in transition period, totally 88 different crop can be evaluated under organic work (Table 1). Some of the organically grown vegetables are; broad bean, winter squash, okra, green pea, pepper, broccoli, tomato, artichoke, green bean, spinach, cauliflower, lettuce, leeks etc.. Some of the organically grown fruit-berries are; apple, pear, quince, almond, peach, walnut, hazelnut, fig, sweet chesnut, kiwi, grape, mulberry, strawberry, blackberry etc.. Some of the organically grown field crops are; barley, wheat, sunflower, potato, clover, onion, garlic, etc.. Some of the organically grown medicinal and aromatic plants are; cape gooseberry, sage, rosemary, dill, burdock, coneflower, balm, peppermint etc.. Although the Kocaeli province allows all these plant varieties to grow, there are very few areas of organic cultivation. The total yield of all plants is only 252 tonnes in organically grown and 115 tonnes in transition periods.

According to the data of the year 2017, there are totaly 9 registered organic plant producer farmers in Kocaeli. 2 of them are certified organic crop producers, the other 2 of them are in both organic and transition period, and the remaining 5 farmers are only in the status of transition period (Table 3). Kocaeli has 12 districts and only 6 districts (Kandıra, Gebze, Karamürsel, Gölcük, Körfez, **İzmit**) (Table 2) share the 9 organic plant farms in 2017 [8]

Table 1. Organic Crop Production Data in Turkey and in Kocaeli in 2017* [6, 7]

	Number of Crops	Number of Holdings/Farmers	Area (Hectres=ha)	Production (Tonnes)
Turkey	214	75 067	543 033	2 406 606
Kocaeli	88	9	70	367

*Transition period is included

Table 2. Farmers/Holdings According to Districts/Villages in 2017 [8]

Districts/Villages of organic farms in Kocaeli
Kandıra /Hıdırlar
Kandıra/Kıncılı
Kandıra/Kaymazerikli
Gebze/Hatıplı
Karamürsel/İnebeyli
Gölcük/İrşadiye
Körfez/Sevindikli
İzmit/Kadriye
İzmit/Çağırğan

Table 3. Organic crop production data in period base in Kocaeli province, 2017 [8]

Farmers/Holdings	Vegetable		Fruit		Field Crops	
	Organic	Transition Period	Organic	Transition Period	Organic	Transition Period
Kandıra /Hıdırlar	+		+		+	
Kandıra/Kıncılı	+	+	+	+	+	+
Kandıra/Kaymazerikli				+		
Gebze/Hatıplı	+		+		+	+
Karamürsel/İnebeyli		+				
Gölcük/İrşadiye				+		
Körfez/Sevindikli				+		
İzmit/Kadriye	+					
İzmit/Çağırğan		+		+		+

Table 4. Organic crop production data from totally 9 farmers/holdings in district base in Kocaeli in 2017 [8]

District/Village	Crop Number		
	Vegetable	Fruit	Field Crops
Kandıra /Hıdırlar	22	18	1
Kandıra/Kıncılı	36	20	9
Kandıra/Kaymazerikli	-	1	-
Gebze/Hatıpları	9	13	3
Karamürsel/İnebeyli	1	-	-
Gölcük/İrşadiye	-	1	-
Körfez/Sevindikli	-	1	-
İzmit/Kadriye	7	-	-
İzmit/Çağırğan	34	11	1

Table 5. Crop Production Data in Kocaeli Province in 2017 [2, 6]

	Area (Hectares=ha)	Production (Tonnes)
Organic*	70	367
Organic*+Conventional	93852,1	426 335

*Transition period included

CONCLUSION

According to before studies about progress in organic agriculture, some of the works have been carried out provincial base [9, 10], regional base [11, 12], country base [13, 14, 15] and continental base [16]. All these works were analyzed; their working area, situation of organic farming potential, challengers, opportunities, farmers's motivation and/or marketing ways. And, the studies have reached the different results depending on their working areas and main subject.

When we analyze organic farming in Kocaeli and all condition, we can conclude that; although we have lots of advantages as having excellent climate and land, having great markets nearby the city and export opportunities; at the same time we have lots of barriers and difficulties. The difficulties are; 1) Consumers cannot distinguish in difference with natural product or organic product yet. As a result of this, demand for organic products is not increasing. The difference needs to be explained to the consumers 2) In the city only one open market in a week. But especially summer vegetable is required at least two times harvest in a week. For this reason farmers worried about not being able to market. Number of markets should be increased. 3) Number of people working in rural areas has been reduced. It is difficult to find agricultural workers. Measures should be taken to encourage rural life. 4) Due to the lack of cooperatives in organic agriculture in the city, the farmers have difficulties in being both producers and sellers. Cooperatives should be established for this purpose in the city. Because of small and fragmented land of the city, the small-scale producers can also enter the organic farming. 5) Technical and academic support (fertilization, irrigation, plant protection etc.) should be provided to organic farmers.

Turkey has a National Action Plan in Organic Agriculture [4]. The plan should definitely be carried out and special plans should be prepared for each city.

Acknowledgment

This article was orally presented at 4th International Agriculture Congress in Nevşehir/Turkey in 5-8 July 2018. Abstract Book p:38

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