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Organic Farming in Turkey

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Abstract: Turkey has been producing organic agricultural products since the mid 1980s. Dried sultanas, apricots and figs were the first items to be produced organically. Since that time, Turkey has increased production and exportation of organic agricultural products. Most of these products are grown in the Aegean Region. Turkish organic production can be classified under the following product categories: dried fruits, spices and herbs, fresh or processed fruits and vegetables, pulses, cereals, industrial crops, other raw/processed products. The leading products are sultanas, figs, apricots and hazelnuts. In this study, we will evaluate the organic agriculture in Turkey in light of recent developments in this area.

Key words: Turkey, organic farming, agriculture, health

INTRODUCTION

Organic farming has attracted an increasing attention over the last three decades, because it is perceived as a solution to the problems currently besetting the agricultural sectors of industrialized countries. Organic farming has the potential to provide benefits in terms of environmental protection, conservation of non-renewable resources, improved food quality, reduction in output of surplus products and reorientation of agriculture towards areas of market demand^[1].

Until 1950's agricultural practices in Turkey were almost completely similar to organic. The introduction of synthetic chemical fertilizers and pesticides started in late 1950's but only on a small scale. Their usage increased towards mid 1960's and reached today's levels with a sharp rise in 1970's.

There is considerable latent interest among farmers in switching over to organic farming in Turkey. Parallel to its worldwide increasing popularity, activities in the field of organic farming have been increasingly carried out in Turkey since 1985 and there is a steady progress since then. Almost all of the crops produced by the organic agriculture methods are exported to European Union (EU) countries and have a significant contribution to the nation's agricultural exports in general. Besides, organic agriculture system brings an extra opportunity to Turkish farmers and exporters who use traditional means of production.

In this study, we will evaluate of the organic agriculture in Turkey in light of recent developments in this area.

DEFINITION OF ORGANIC FARMING

There are many definitions of organic farming from various perspectives. Organic farming can be defined as an approach to agriculture where the aim is: to create integrated, humane, environmentally and economically sustainable agricultural production systems, which maximize reliance on farm-derived renewable resources and the management of ecological and biological processes and interactions, so as to provide acceptable levels of crop, livestock and human nutrition, protection from pest and diseases and an appropriate return to the human and other resources employed^[2].

Organic farming respects the environment's own systems for controlling pest and disease in producing crops and breeding livestock and avoids the use of synthetic pesticides, herbicides, chemical fertilizers, growth hormones, antibiotics or gene manipulation. Instead, organic farmers use a range of techniques that help sustaining ecosystems and reducing pollution^[3].

According to the IFOAM 2002 Basic Standards, organic agriculture is a whole system approach based upon a set of processes resulting in a sustainable ecosystem, safe food, good nutrition, animal welfare and social justice. Organic production therefore is more than a system of production that includes or excludes certain inputs^[4].

Organic agriculture is best known as a farming method where no synthetic fertilizers and pesticides are used. However, such a description does not give the essence of this specific form of cultivation, which is the holistic management of the farming system. According to

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the definition of the Codex Alimentarius, organic agriculture is a holistic production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles and soil biological activity. It emphasizes the use of management practices in preference to the use of off-form inputs; taking into account that regional conditions require locally adopted system. This is accomplished by using, where possible, agronomic, biological and mechanical methods, as opposed to using synthetic materials, to fulfill any specific function within the system^[5].

Organic agriculture has its roots in traditional agricultural practices that evolved in countless villages and farming communities over the millennia. By employing trial-and-error method, local farmers transferred their best results from generation to generation^[6].

Codex Alimentarius Commission, the United States body that oversees the world's food standards, assessed long and hard to define organic agriculture as a holistic production management system that avoids use of synthetic fertilizers and pesticides, minimizes pollution of air, soil and water and optimizes the health and productivity of independent communities of life, plants, animals and people^[6].

On the other hand, the US Department of Agriculture has defined it as follows: a system that is designed and mailed to produce agricultural products by the use of methods and substances that maintain the integrity of organic agricultural products until they reach the consumer. This is accomplished by using, where possible, cultural, biological and mechanical methods, as opposed to using substances, to fulfill any specific fluctuation within the system so as to: maintain long-term soil biological activity; ensure effective peak management; recycle wastes to return nutrients to the land; provide attentive care for farm animals and handle the agricultural products without the use of extraneous synthetic additives or processing in accordance with the act and the regulations in this part.

Alternatively, the FAO defines organic agriculture as a holistic production management system, which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles and soil biological activity. Organic production systems are based on specific and precise standards of production, which aim at achieving optimal agro-ecosystem that are socially, ecologically and economically sustainable. Terms such as biological and ecological are also used in an effort to describe the organic system more clearly. Requirements for organically produced foods differ from those for other agricultural products in that production procedures are an intrinsic part of the identification and labeling of and claim for such products^[7].

THE DEVELOPMENT OF ORGANIC FARMING IN TURKEY

Organic production in Turkey started in 1984-85 with the increase in demand from the consumers of the EU countries interested in organically grown traditional crops such as sun dried fruits and nuts. The initial consultation between the producing companies and the importing EU firms has also started during this period. For the last 5-8 years, the demand for new products has been increasing.

For further development of organic agriculture in Turkey each sector has different needs. These can be classified as training, research and development of the domestic market for organic inputs and organic products^[8].

Turkey passed the first national regulation on production, processing and the marketing of organic items on December 18, 1994. Currently there is a draft law which, if becomes law, will slightly alter the existing regulations. The first regulation was based upon the European Union's regulation number 2092/92. The Ministry of Agriculture and Rural Affairs (MARA) was given the authority to oversee organic cultivation in the original regulation. To do so, MARA established two committees to provide guidance and support to organic sector, the National Steering Committee of Organic Agriculture, which was policy formulation responsibilities and the committee for Organic Agriculture, which has operational responsibilities. An industrial advisory body, The Ecological Agricultural Organization (ETO), works to provide input into policy determination, along with advancing the technical improvement of the organic industry. Members of ETO include producers, exporters, academics and consumers^[9].

Private organizations can certify products as organic product, but they must be registered with MARA and must have received a permit from MARA to conduct licensed activities in Turkey. Currently there are seven authorized companies in Turkey, six from Europe.

In order to produce licensed organic product, a producer must apply for certification from one of these agencies. Due to the high cost of getting certified, some processors and exporters make applications on behalf of a number of individual producers operating within a project organized by the processor/exporter. The certifying agencies assess the producer's compliance with the Turkish organic regulation and other related EU regulations. Soil, leaf and product samples are taken at least twice a year, along with random visits during the growing and production cycle^[9].

Production of organic products in Turkey: Most of the organic cultivation is done in the Aegean Region of

Turkey, but does occur elsewhere throughout the country. At present the largest part of the organically produced goods includes dried fruits with a percentage of 61. The rest of the ranking is as follows: 21% is farm corps, 5% is fresh fruits (or processed ones), 2% is vegetables, 2% is grape-like fruits, 2% is medical and aromatic products, 7% is other products^[8].

A review of organic agriculture in Turkey in terms of product diversity reveals the following: While only 8 different crops have been cultivated until 1990, in the year 2003 product diversity has increased 170 various food and non-food products. On the other hand, the cultivation area which was 6.789 ha in 1996 reached 103.500 ha in 2003. The same development is observed in the number of producers (enterprise), from 1.947 in 1996 to 13.016 in 2003. The examination of distribution of organic production in 2000 shows that 63% of total production is dry products (dry and dried fruits), which is followed by farm plants with 18%. Regarding the cultivation areas, 35% of all fields is used for dry and dried products which is followed by farm plants with 30% while the smallest cultivation area is used for vegetables (1%) and grape-like fruits (3%). Lastly, as for the producers, the highest number of producers is in the group of dry and dried products (54%). Farm plants and fresh fruits are in the second and third in ranking (respectively, 15% and 10%). The lowest number of producers is in the vegetables group (2%)^[10].

Table 1 shows some of the organic agricultural crops produced in Turkey with its number of producers, cultivation area and production amount.

Exportation of organic products: Although, in the early stages the exportation of organic agricultural products in Turkey was limited to sultanas, dried figs and apricots, since 2000 the sector and production variety have developed. Exportation of organic products is concentrated in sectors of hard-shelled fruits, frozen fruits and vegetables, fresh fruits and vegetables, spices and pulses. Distilled rose water, rose-oil, olive oil and cotton are other export items^[11].

Number of countries to which Turkey exports was about 20 in 2000 and most of them are EU countries. Turkey exports most of its organic agricultural products to Germany, Netherlands, Switzerland, United Kingdom, Denmark and France.

There is no separate Harmonized Commodity Description and Coding System for organics and Turkey has no other complementary system for tracking exports. Besides, trade data on organics exports is rough. The Aegean Exporters' Union keeps statistics on export trade, but generally relies on the exporters to

Table 1: Organic production, number of farmers, number of products and acreage in Turkey

Years	Number of products	Number of producers	Acreage (ha)	Production (ton)
1996	26	1.947	6.789	10.304
1997	53	7.414	15.906	47.612
1998	67	8.199	24.042	99.300
1999	92	12.275	46.523	168.306
2000	95	18.385	59.985	237.210
2001	98	15.795	11.324	280.328
2002	145	12.428	89.827	310.125
2003	170	13.016	103.500	359.131

Source: MARA Chaimanship of Research Planning and Coordination Committee

provide the information voluntarily. For the year 2003, total 21.083 million tons production and export revenues were \$ 37 million \$ (Table 2). It is estimated that this voluntary reporting system results in an under reporting of approximating 100%^[9].

Domestic market conditions for organic products in

Turkey: The work with regard to the consumption structure of organic products in Turkey is limited. Despite the fact that the productions of organics date back to 1985, domestic marketing is quite recent and has been developing in the last few years. Thus, the production of organic corps was directed at foreign markets until 2000. After 1999 an increase in domestic demand has been observed when some shopkeepers have started to sell organic products in cities such as Istanbul, Ankara, Adana, Antalya, KuşadasI and Bodrum. Despite the slight progress in the domestic markets, the share of organic production in overall agricultural production is still under 1%. Variety of organic corps include products which have long shelf life and market flexibility such as dried fruits and vegetables, hard-shelled, pulses, medical and aromatic plants and processed (frozen, conserved fruits and vegetables, fruit juice, evaporating oils)^[12].

The creation of domestic market for organic agricultural products depends on, primarily, consumer preferences. If consumers have a preference for such products and accept to pay a more expensive price then, it can be claimed that a domestic market for organic products in Turkey exists. According to the results of a study for identifying the potential demand for organic agricultural products in big cities such as Ankara, Istanbul and Izmir^[13].

- A significant number of consumers are uninformed about organic products.
- In doing their food shopping, consumers give more importance to the product features such as nutrition value and not containing additives than its price.

Table 2: Exports statistics for organic products of Turkey

Products	2000		2001		2002		2003	
	(ton)	(1000 \$)	(ton)	(1000 \$)	(ton)	(1000 \$)	(ton)	(1000 \$)
Dried sultanas	4.252	4.836	5.412	4.887	6.115	5.718	5.677	7.056
Dried apricots	1.268	2.741	1.934	2.805	1.835	4.044	1.688	4.734
Dried figs	2.103	4.074	2.227	4.764	2.228	5.537	2.027	5.166
Hazelnuts	1.252	4.226	1.590	5.457	1.560	4.755	1.403	5.107
Pine nuts	52.000	787.000	54.000	726.000	96.000	1.534	70.000	1.212
Lentils	979.000	806.000	1.097	841.000	962.000	655.000	1.447	1.025
Chickpeas	707.000	636.000	1.035	827.000	1.413	1.113	1.167	830.000
Apple juice	315.000	424.000	142.000	138.000	468.000	456.000	2.528	3.055
Cotton fibres	175.000	299.000	92.000	184.000	411.000	623.000	865.000	1.376
Frozen fruits	185.000	252.000	1.163	1.368	892.000	1.106	1.212	1.983
Frozen vegetables	352.000	184.000	575.000	355.000	666.000	391.000	841.000	573.000
Honey	20.000	38.000	30.000	63.000	385.000	852.000	109.000	295.000
Pistachio	24.000	176.000	51.000	307.000	21.000	129.000	32.000	265.000
Tomato sauce	1.000	1.000	13.000	11.000	116.000	86.000	134.000	142.000
Canned cherry and sour cherry	25.000	12.000	92.000	126.000	57.000	89.000	88.000	146.000
Olive oil	15.000	48.000	5.000	12.000	25.000	65.000	54.000	174.000
Prune	275.000	321.000	351.000	460.000	139.000	236.000	6.000	24.000
Other products	1.129	2.695	1.693	3.911	1.794	3.488	1.735	3.770
Total	13.129	22.556	17.556	27.242	19.183	30.877	21.083	36.933

Source: Aegean Exporter's Union

- Consumers presume that apart from the flour and floury products all food contain some sort of additives. Consumers believe that especially the goods, which are produced out of its natural season (produced under a cover), contain residues risky in terms of health.
- It has been observed that young consumers tend to be more indifferent to the residues in their food.
- Majority of consumers wash the products with abundant water and/or with soap in order to decrease the risk that might be due to the pesticide residues in fruits and vegetables.
- Tomatoes take the first rank among the products, which consumers want to be produced organically. Then come other greenhouse products. Apple takes the first place among the fruits that public prefers to be grown organically. Appreciation for additional cost for organic products is proportionate with household income and inversely proportional with the number of individuals in the family.
- Informing the consumers on the issue is central to increase the demand for organic goods in Turkey. Generally, consumers of organic products are felt to be within the top two strata of consumers that constitute 15% of the population, some 10 million people with 50% of total income and who are especially trend sensitive, concerned with health and somewhat knowledgeable of the benefits of organically produced products^[9].

Many Turkish consumers already feel their products are very healthy, as Turkey has always been an agrarian country that traditionally produces most of its own food

items. For many urban Turks, a trip back to their home village areas means bringing back farm-fresh products to be consumed in the city. The appeal of certified organic products is not immediately apparent to such consumers.

In Turkey, the size of the organic product market is estimated at 3 to 5 \$ million, with annual growth projected at about 50% for the next five year. Dried sultanas, figs and apricots are the most popular certified organic items, followed by olive oil, honey, fruit compotes and some cereals and pulses. Fresh items, such as cheese, yogurt and eggs and meats are greatly desired by retailers, but local production of such certified organic items is about nil. Naturally produced products of these types are currently sold.

Turkey produces little in the way of organic teas, coffees and other hot beverages and also has no organic chocolates, candies and gums. Most of these products are imported or not yet present in the market. It is estimated that there are 50 independent retail outlets in Turkey, in addition to the various mass retailers, featuring certified organic products. Most of these outlets are located in or around the major metropolitan areas of Istanbul, Ankara and Izmir.

CONCLUSIONS

Two basic factors will determine the future of organic agriculture activities in Turkey. The first one is demand of consumers who are willing to pay more for a product that is environment and health friendly, while the second factor is the number amount of producers who will produce without using chemical inputs and will accept the special conditions of organic farming.

In comparison to the figures obtained in developed countries and to the world average the rates of fertilizer and pesticides applied per unit area in Turkey are still low. In Turkey yearly 102.4 kg of chemical fertilizer is used per acreage. This figure is lower than both world average (105 kg ha⁻¹) and average of European countries (132 kg ha⁻¹)^[4]. Similarly pesticide consumption also lays highly behind the level in developed countries (450-500 g ha⁻¹). For this reason, the expectation is expected that there isn't dense pollution in Turkey's lands and transformation to organic farming will be relatively easier. With the help of producer informing activities the progress of organic farming will be accelerated.

The fact that in Turkey there is no available subsidy for producers in the organic agriculture business as in the case of Europe results in slow development of organic farming. While there are various subsidies for traditional agricultural crops there isn't any for organic agricultural production. Organic production can be supported by such measures as giving priority in loans to producers in the business of organic agriculture, giving subvention proportionate to the size of cultivation field or providing cheaper organic inputs.

Ministry of Agriculture organizes various training activities in recent years in certain regions with the aim of informing the producers about the issue of organic agriculture. Broadening such activities throughout the country and introducing advisory services given by the Ministry will pave the way for development of organic agriculture.

Turkey has quite diverse product range due to its geographic location and suitable climate conditions. Considering these conditions Turkey has a potential of developing the organic agriculture rapidly. Besides highly developed distribution network and being close to Europe also is advantageous for Turkey.

REFERENCES

1. Lampkin, N.H., 1990. Organic Farming, Farming Press, Ipswich.
2. Lampkin, N.H. and S. Padel, 1994. The Economics of Organic Farming, An International Perspective, CAB International, Aberystwyth, UK.
3. http://www.europa.eu.int/comm/agriculture/qual/organic/def/index_en.htm (30/10/2003).
4. Scialabba, N. and C. Hattam, 2002. Organic Agriculture, Environment and Food Security, FAO Environment and Natural Resources Service Sustainable Development Department, Rome, pp: 10.
5. Anonymous, 2001. World Markets for Organic Fruit and Vegetables, Technical Center for Agricultural and Rural Cooperation, Rome, pp: 10.
6. FAO, 2001. Organik Tarım Tanıtım broşürleri.
7. Anonymous, 1999. FAO/WHO Codex Alimentarius Commission Guidelines for the Production, Processing, Labelling and Marketing of Organically Produced Foods.
8. Anonymous, 1999. Survey on the Mediterranean Organic Agriculture Country Report (for Turkey).
9. Nicely, R., 2001. Turkey Organic Products, Organic Food Reports, United States Department of Agriculture Foreign Agricultural Service Global Agricultural Information Network Report.
10. Altındışlı, A., 2002. Organik (ekolojik) tarım eğitim semineri ders notları, Ekolojik Tarım Organizasyonu Derneği (ETO), Bornova, İzmir, pp: 10-13.
11. Taşbaşlı, H. and B. Zeytin, 2003. Organik Tarımın Genel İlkeleri, TC Tarım ve Köyişleri Bakanlığı APK Kurulu Başkanlığı, Ankara, pp: 12-13.
12. Aksoy, U., 2001. Ekolojik Tarım: Genel Bir Bakış, Türkiye 2. Ekolojik Tarım Sempozyumu, Tarım ve Köyişleri Bakanlığı Tarım 2000 Vakfı Yayını, Antalya.
13. Akgüngör, S., B. Miran, C. Abay, E. Olhan and N.K. Nergis, 1999. İstanbul, Ankara ve İzmir İllerinde Tüketicilerin Çevre Dostu Tarım Ürünlerine Yönelik Potansiyel Talebin Tahminlenmesi. Agricultural Economics Research Institute. Publication Number:15. Ankara.
14. Anonymous, 2000. FAOSTAT Statistics Database. <http://www.apps.fao.org>