

## ORGANIC AGRICULTURE IN PROVINCE OF USAK IN TURKEY

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### ABSTRACT

Organic agriculture consists of environmental and human friendly production systems in order to reestablish the natural balance which is lost as a result of inaccurate and excessive farming practices. In others words, instead of using synthetic chemical pesticides and fertilizers, organic agriculture promotes organic and green fertilization, crop rotation, soil conservation, increasing plant resistance as well as benefitting from parasites and predators. In addition, organic farming refers to improving not the amount of production but the quality of it. Due to the spread of diseases caused by pesticide and hormone residue on the products, people show great interest in organic agriculture so as to lead a healthier life. Total organic agricultural production in the world is 4.516.810 tons, while in Turkey it is 353.173 tons. As for Turkey's organic agriculture, U ak province has little share in it despite its favourable climate and location. In this study, as a methodology, we analyzed the existing data on organic agriculture in U ak province and in Turkey as well as in the total production in all over the world. And then, we compared those statistics with each other, finding that U ak province, however great potential it has, hasn't been able to reach the desired level in terms of organic agriculture. We focus on determining the potential of U ak province for organic agriculture. Furthermore, we aim to define the problems of organic agriculture and to find solutions to them in order to make organic agriculture more widespread and more practicable.

**Key words:** *organic agriculture, U ak province, potential.*

### INTRODUCTION

Man, afraid of his population and nutrition being under danger, have populated soil and underground water to the extent which deteriorates human health and put the ecological sustainability of the environment under threat in terms of living organisms. Therefore, while human beings must meet their needs of sufficient, balanced, healthy and economical nutrition, taking measure for protecting natural balance will not be enough but they also have to reestablish agricultural production systems, especially in developed countries. The efforts of reclamation planning and

production techniques conducted in order to obtain more output from unit area have ignored natural and environmental resources. The heavy use of chemical fertilizers and herbicides, although they provide productivity increase, has caused many problems such as quality loss, soil deterioration, organic substance loss from the soil, soil erosion, proliferation of different diseases and harmful substances, high rates of environmental pollution (Walaga et al., 2005; Popović et al., 2013a, 2013b, 2013c; Glamočija et al., 2015; Filipović et al., 2015). The possibility of cancer and other health problems caused by residues of chemical fertilizers and herbicides lead researchers to improve production methods which can prevent these calamities. Therefore, in order to get health food with high nutritional value without degrading the environment, which have no harmful effect on human and animal healthy and which minimize the environment pollution, evolutionary agricultural systems have been investigated and a system called organic agriculture has been improved.

### **MATERIAL AND METHOD**

In this study, the current state of organic agriculture in Turkey and Uşak province has been presented and some suggestions have been put forward for future improvements in organic agriculture. In doing so, literature based analyses were conducted, interpreting the instructions used as methods and by evaluating and synthesizing the sources based on statistical data.

### **RESULTS AND DISCUSSION**

In organic agriculture, soil improvement and protection of organisms within it must be provided; moreover, soil must not be exploited. On the contrary, its natural productivity must be enhanced. To achieve these goals, crop rotation and organic fertilization has been applied and also appropriate soil processing techniques has been used. For instance, the compost prepared under aerobic conditions with farm fertilizers and organic wastes has been utilized in a way most suitable for this aim. Besides, rock flour and algae product can be used as well as green fertilization. With the help of these practices, biological processes of soil are promoted, driving some food nutrition to be activated indirectly and thus providing convenient circumstances for plants to grow healthy and in a balanced way (Anonymous, 2005).

The efforts throughout the world to develop alternatives to conventional agriculture until 1970 gained a new dimension with the foundation of international federation of organic agriculture movement (IFOAM), which first defined and wrote the rules of ecological production. These rules were modified as 'IFOAM Basic Standards' in 1998 and were enacted after having been approved by general assembly.

The total area on which organic agriculture is performed accounts for 43.1 million hectares and Australia ranks as the first with 17.3 million hectares and Europe as the second with 11.5 million hectares. And then comes Latin America, Asia, North America and Africa with 6.6 million hectares, 3.4 million hectares, 3 million hectares and 1.2 million hectares respectively.

As for the countries, Australia ranks as the first with 17.2 million hectares, Argentina as the second with 3.2 million hectares and USA as the third with 2.2 million hectares (F BL-IFOEM, 2015).

Turkey has great potential for organic agriculture with its geographical location, unpolluted agriculture lands, diversity of its plant kinds, local plant kinds well-adapted to regional conditions and with its having abundant young labor force.

Organic agriculture areas have been increasing day by day in the world. The countries with this increase pace are Argentina, Turkey and Spain. Organic agriculture production in Turkey started with the demands by foreign companies working in Europe in the years 1984 and 1985. After legal regulations in 1994, a rapid improvement in this realm was recorded (Özbilge, 2007).

Organic agricultural production started, in Aegean Region in 1985, with raisin, dried figs and dried apricots of 8 kinds which are some of the most important export products. In later years, organic agriculture expanded to other regions with products such as hazelnut and cotton (Ataseven and Aksoy, 2000) and reached 208 products according to 2014 data (TU K, 2015). In 2014, organic agriculture was performed by 71.472 farmers on 842.216 hectares land and with the production amount of 1.642.235 tones (Anonymous, 2015).

In Turkey, among most produced field plants as organic production, cool and hot climate grains rank as the first. Among the grains with 70 % share of total organic production, wheat ranks as the first accounting for 57.5 % with 1.365 tones corn as the second accounting for 41.7 % with 990 tones, barley as the third accounting for 3.3 % with 77 tones, oat as the fourth accounting for 7 %, tane and rye accounting for 1 % and 0.5 % respectively (Anonymous, 2014). Because especially the demand for floury products is high, production of wheat in vast lands organically has increased. Of all the organic field plants, the lowest share belongs to industrial plants such as potato with 82.6 %, sunflower with 13.7 %, beet with 6.4 % and sesame with 3.9 % (Anonymous, 2014).

When production group of garden plants are examined, it is found that total 31 crops are produced, the 79.9 % of which include fruits, 17.8 % of which are vegetables and 2.3 % of which is grape. Among the most production plants as organic production fruits occupy the first place with 40864.62 tones. Apple ranks as the first with 31019.74 tones accounting for 75.9 %, sour cherry ranks as the second with 3032.06 tones accounting for 7.41 %, strawberry as the third with 2993,11 tones accounting for 7.32 %, almond, pear, cherry, apricot follows the order accounting for 2.1 %, 2.02 %, 1.93 %, 1.92 % respectively (Anonymous, 2014). 13 products in fruit group haven't been mentioned due to their low share less than 1 %.

U ak province has 5.341.000 decares of surface area, 2.313.517 decares of which is reserved for agricultural area accounting for 44 % of total land. In 2.145.413 hectares of agricultural land, 44.280 tons of field products are raised and 64.788 tones of fruit are grown in 86.067 decares, 17.713 tons of vegetable are grown in 71.919 decares. The most produced crop in garden plants group is grape on cultivated 26.995 decares of land and then cucumber, almond, cherry, strawberry,

nut are produced on 23.604 decares, 16.56 decares, 16.6 decares, 6.747 decares and 1.876 decares of land respectively. When it comes to field plants, barley rank as the first with 198.000 tons. Wheat, sugar beet, potato and chickpea follow it with 167.000 tons, 63.000 tons, 10.000 tons and 26.000 tons respectively (Anonymous, 2015).

### CONCLUSION

Turkey's general location, unpolluted environment and its climate characteristics make Turkey's all geographical regions a source for organic agriculture. Domestic consumption of organic products has great significance in the health of local people. Health and nutritional values of organic products must be widely known. Moreover, U ak's proximity to Izmir harbor and its widespread opportunity to use railroads, motorway and airway provide great opportunities to market organic products both as exports and as domestic product. Thanks to geothermal water sources existing in the region, greenhouses can be built so that organic vegetable production can be made widespread. Because U ak has a number of lakes, organic agriculture can be achieved in irrigatable farming land without giving any harm to water flora and fauna richer. Producers must be informed about using organic input instead of using wrong and heavy chemical input.

The producers performing organic agriculture must be supported with incentive credit and be given education. Because organic agriculture is more costly than conventional ones, building up markets in order to promote production in organic agriculture is great necessity.

In organic agriculture, unconscious use of fertilizers and pesticides leads to environmental pollution. Therefore, the use of biological and biotechnological methods must be made widespread in line with organic agriculture while at the same time these applications must protect the human health and nature.

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