

# **The Effects Of Organic Agriculture On Ecosystem And Safety Of Organic Foods**

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## **Abstract**

The demand for organic foods is increasing every day. The main reason for this increase in healthy, nutritious and safe food supplements is that the community organic market is also growing rapidly around the world, the health benefits of organic foods, or that the risk must be scientifically that it carries. The effects of organic farming practices can also be discussed in the ecological system. This review of conventional foods, organic foods, and examines the impacts on the environment both in terms of food safety.

## **1.INTRODUCTION**

Organic food consumption is increasing rapidly in recent years. The main reason is that consumers think that the products produced by conventional methods are more safety, more nutritious and environmentally friendly. The reason relates to the principles of organic farming. In fact, organic farming, synthetic chemical agents (pesticides, fungicides, etc.), genetically modified organisms and their products may not be used with the vegetable and animal hormones (Magkos et al., 2003). However, many studies in organic foods and nutritional value compared to conventional food in environmental contaminants and did not show a significant superiority (Woese et al., 1997). On this subjects, studies show that organic foods contains less pesticides and nitrate than conventional foods. Moreover there are studies showing that the mycotoxin contaminated with organic foods. In synthetic foods organic pesticides are not used. So plants have secondary metabolites that contain more toxic effects. This may be a potential health hazard. Therefore, organic foods are more nutritious and safer than conventional foods, it is very difficult to say that scientifically. However, organic farming practices are environmentally friendly. Soil and water resources are not contaminated with synthetic chemicals, Environment are protected from antibiotics, hormones, synthetic chemicals and heavy metals contaminants. Instead of producing high yield and high quality products, the aim of organic agriculture is protection of the environment, plant, animal and human health without pollution water supplies and air. Therefore, conventional foods, organic foods, although not significantly have an advantage because of the positive contribution organic farming practices on the ecological balance production and consumption should be encouraged.

## **2.ENVIRONMENTAL IMPACTS OF ORGANIC FARMING**

The main goal of organic agriculture is the protection of soil, animal and human health without polluting of soil, air. With the implementation of the sustainable development of organic agriculture, ecotourism, sustainable agriculture, biodiversity, erosion, desertification and the impact of the Elimination of the factors that cause climate change is possible.

Organic agriculture is of sowing. Sowing, plants of different cultures to support the mutual succession to educate interspatial. Thus, the soil is maintained and increased productivity, reduced soil erosion, labor is evaluated on a regular basis during the year. To take soil fertility in organic farming, compost, green manure, farmyard manure, mineral fertilizers and microbial soil is added. Thus, the viability is maintained and the efficiency of the soil will be protected (Hansen et al, 2002). Compared to conventional agriculture, organic farming helps to increase biodiversity. With organic farming enriches the soil fauna, especially in large areas, increases plant diversity, increase the levels of soil borne organisms, arthropods, insects, and increases the number of birds (Bengtsson et al., 2005).

## **3.ENVIRONMENTAL IMPACTS OF ORGANIC LIVESTOCK**

In organic livestock antibiotics and chemicals to increase weight are not used for feeding and also synthetic chemicals are not used in the treatment. Animals are fed organic feed. Shelters are designed to obtain sufficient fresh air and sunlight. The main goal of organic livestock pastures for many years, ensuring the use of water resources and minimize environmental pollution by using clean and efficient. Instead of high milk yield and low cost of organic animal husbandry, environmental protection, animal health and welfare in the foreground. As a result, sustainable organic farming practices and animal husbandry development, provision of animal welfare, to minimize adverse impacts on the environment and herd health protection, it is possible (Kouba, 2003).

## **4.COMPARISON OF ORGANIC AND CONVENTIONAL FOODS SECURITY**

### **4.1.Pesticides**

The use of synthetic pesticides are prohibited in organic agriculture. Used instead of synthetic pesticides, biological pesticides in the human health effects has not been scientifically. Products of chemicals must not be contaminated soil, air and water. These chemicals, for example, calcium hypochlorite, sodium hypochlorite, copper sulfate, boric acid and elemental sulfur may be. America and European countries as a result of studies conducted on 94 000 samples of organic agricultural products, pesticide residue was found to have less than conventional products

### **4.2.Nitrates**

Conventional foods, contain fewer nitrates than organic foods. This is usually caused by not using artificial fertilizers organic foods. In a study conducted in Belgium 1703mg/kg organic food samples and the average nitrate, nitrate of conventional food samples were an average of 2637mg/kg (Pussemier et al., 2006). In another study of conventional vegetables, organic vegetables contained three times less nitrate was found. The organic milk contains more nitrate than conventional milk's (Magkos et al, 2003).

### **4.3.Nutritional Value**

Compared to conventional foods with organic foods, it can be said that organic foods contains higher dry matter and high mineral content. In addition, there are also studies that show that higher vitamin C (Michael, 2005). Furthermore, many studies have shown that organic foods are made by conventional foods is not a significant difference in terms of nutritional values. This is the most comprehensive research on the subject, Woese et al. (1997), between the years of 1994 to investigate derlemişlerdir to 150 with the 1926. Examples of major cereals, vegetables and fruits that are used in research, bread, beer, milk and egg products, meat and products, and the calf. As a result, There is no significant differences between organic and conventional foods nutritionally. Worthington (2001) compiled 41 work on conventional foods, as a result of study organic foods contents of vitamin C, iron, magnesium phosphorus is higher.

### **4.4.Mycotoxins**

Synthetic fungusits are not used in organic agriculture. Consequently, organically grown plants can be more sensitive that claims against mold contamination. Studies of grain and cereal based products, fresh apples and Apple juice, such as organic products because they are more sensitive than the conventional as mold contamination. in 2008, Spain and Portugal ochrotoxin A presence was determined from organic and conventional cereals products. %72 percent of organic products and %8 percent of convantional products contained OTA between 1,64-0,05 ng/kg (Juan et al., 2008). In Italy 125 peach, pear, apricot and mixed fruit juice examples are determined in terms of patulin. Patulin was determined in conventional samples as 37,8 while in organic foods was 27.2%. Conventional examples show the average level of 3.6 µg/kg patulin, organic products, is the 3.3 µg/kg level average. None of the examples exceed the European Union current legal limit of 50 µ g/kg (Spadaro et al., 2008). In another study, fumonisin presences was determined in 60 sample of organic and conventional corn samples. Fumonisin content of conventional samples was found as 22-43 ng/g while in organic samples contents was found as 19-35 ng/g. None of samples exceed fumonisin level legal limit of 2000ng/g (Arino et al.2007). Results of organic agricultural products although not sufficient to indicate that it contains mycotoxins than conventional prducts. But organic agricultural products are not safe for mycotoxins until at least can be said of conventional products.

### **4.5.Microbial safety**

Synthetic fertilizers are not used in organic farming. Instead of synhetic fertilizer, animal manure, vegetable waste (green manure), marine waste products are used. These products may contain fecal and pathogenic microorganisms. Therefore organic foods contain more Salmonella, Listeria and Escherichia coli O157:H7 than conventional foods (Winter and David, 2006).

## **5.RESULTS**

Popularity and consumptions of organic foods are increasing. Consumers of organic foods think that conventional foods are more secure, more nutritious and better tasting. It is known that organic foods content less nitrate, more vitamin C and some minerals than conventional ones. In addition, organic foods contain less pesticide residue. In addition the risk of organic fertilizer contain fecal and pathogenic microorganisms and toxic exposure to mycotoxins than

conventional foods of plant metabolites are discussed in terms of food safety, organic farming is considered to contain more than makes. On the other hand according to conventional agriculture, organic agriculture polluting the soil and water resources, plant, animal and human health keeps in the forefront. Oversees the ecological balance and sustainable agriculture offers. As a result, problems related to organic farming, alternative methods of security, traceability and quality management systems and good agricultural practices and organic farming should be encouraged to be reduced.

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