

PRINCIPLES OF ORGANIC AGRICULTURE

Viorela CODOI, Ramona IANCU

Faculty of Agricultural Sciences, Food Industry and Environmental Protection “Lucian Blaga” University, 5-7 Ion Rațiu Street, 550012, Sibiu, Romania; E-mail: vio13_2008@yahoo.com

Corresponding author e-mail: vio13_2008@yahoo.com

Abstract

In Romania, organic farming has gained more ground being desired, today, by all farmers and also consumers. Most want healthy products without added different chemicals, no additives or pesticides, which could endanger their lives. In this paper discusses the differences between organic farming and conventional farming, given that in 2012 more and more opting for agriculture "bio" or "eco" as they are called now. Even if you do not get the same products as in conventional agriculture issues, the organic agriculture worth because the products have taste, natural color and can be collected at maturity without any problem. Organic farming and organic products that are increasingly used and required both nationally and internationally, being regarded as an opportunity for Romanian export of organic products. As a main conclusion, it is considered that this agriculture could help protect the environment, biodiversity and lead to develop country bringing high-income if the standards are observed.

Key words: natural, organic, pesticides, products, Romania.

INTRODUCTION

“Organic agriculture“, protected term and attributed of E.U. to Romania to define the agricultural system is similar to the terms of „ecological agriculture“ or “biological agriculture” used in other member states [1].

The role of organic farming is to produce pure food, more appropriate to human metabolism, the full correlation with environmental conservation and development. One of the main goals of organic farming is the production of agricultural and food products fresh and authentic, processes designed to respect nature and its systems [2, 6].

In organic farming is not allow to use pesticides, additives, antibiotics, various chemicals, genetically modified organisms, of substances which speed up plant growth. We all saw vegetables and fruits of special sizes, of fantastic colours but, unfortunately bland. This is because vegetables are not mature at the time of collection, although looks ripe. The organic farming represents an important value for Romania and also increases the interest in the countryside [4].

All rules concerning the definition method of production, principles and all the objectives for organic agriculture are found both in community law and national legislation.

Because a product can be considered "organic product", producers must complete a rigorous process and comply with specific characteristics, and to be marketed as an “organic products” must undergo a conversion period of two years [5].

In Romania, the control and certification of organic products is currently provided by private inspection and certification bodies. They are approved by the Ministry of Agriculture, Forests and Rural Development, on the basis of independence, impartiality and competence established by Order No. 65/2010 for approving the rules for the system organization of inspection and certification, approving the inspection and certification bodies and inspection the activities of monitoring bodies [15].

Organic agriculture in Romania in recent years known an increasing trend, both in the vegetable and animal production sector.

The most important condition of organic farming is to promote the concept of organic farming for consumers to understand the benefits of organic products. The beneficial effects of organic agriculture are reflected on the environment, on the livestock, on the economy and society [7, 5].

Organic farming involves the *production management system* that promotes and

enhances agro-ecosystems health, including biodiversity, biological cycles and soil biological activity [3].

An organic production system is designed so that:

- to improve the biological diversity from the whole system;
- to increase soil biological activity;
- to maintain long-term soil fertility;
- to recycle wastes of plant and animal, restore soil nutrients, thus minimizing the non-renewable resources;
- be based on renewable resources that can be organized locally in agricultural systems;
- to promote healthy use of soil, water and air and minimize all forms of pollution with results from agricultural activities;
- to handle agricultural products with an emphasis on careful processing methods to maintain organic integrity and vital qualities of the products at all stages;
- to be stable in any farm in a period of transformation, the corresponding duration of which is determined by specific local factors as history of land, type of crops and livestock produced [2, 3].

Organic market

Organic products market has greatly expanded from 1990 until now, U.S.A. is currently the largest market for organic products. In Romania, being a developing country, organic market is still small, but there were registered increases. In E.U. the most important policy on organic agriculture is the European Action Plan for Organic Agriculture and Food Products started in 2004 by the European Commission. They want to develop as much organic agriculture and three important steps are followed:

1. increasingly organic market development;
2. improve existing standards on organic agriculture;
3. stronger support for organic agriculture for rural development increased [14].

Also need to be realized a support of consumers and should be informed more about the existing organic products by providing information and by publicity about organic products [6].

For example, *traceability* is a very important part for certification of organic products, but is

not perceived as an obstacle to producing and certification of organic products. Organic products must have a label on them stating that they are really produced under organic production methods. In 2001 the U.E. introduced a voluntary labelling organic logo (Fig. 1) [8].



Fig.1. U.E. mark for organic products [8]

Certification of a organic products not consist only to look at the product and testing it, but also consist in documentation and control the entire process of production [16].

In Romania, areas under organic system evolved in 2008. The most important cultivated plants are cereals, vegetables, forage plants, oilseeds and organic area cultivated in 2008 was 140,132 ha (Fig. 2 and Fig. 3) [16].

Organic products market was and is still influenced by the offer, first brought to market organic products are small farmers. Also meet obstacles in buying organic products. The main obstacles are the prices, underperforming and distribution of our products, no information about organic products and doubts that arise about the integrity of organic products.

Organic products are sold at a premium price from the conventional. Another factor that influences the price of organic products is the balance between supply and demand of organic products [4, 9].

Has established six essential conditions for development of markets for organic products:

1. Large emand;
2. Growing involvement of all food companies
3. International promotion;
4. To be a dominant brand;
5. Sales through supermarkets;
6. Acceptable prices to organic products [4, 6].

The distribution of organic products can be (Fig. 4).

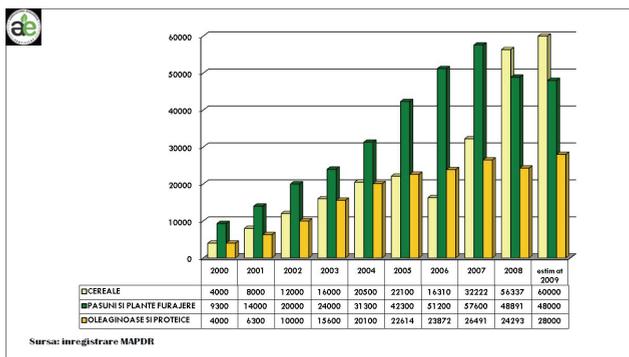


Fig. 2. Structure crops in organic farming (1) [16]

Permanent pasture and forage crops 60,000 ha (20%), cereal with 56,000 ha (18%) and oil and protein by about 30,000 ha (14%), collection and certification of plants and flowers of flora spontaneous 59,000 ha.

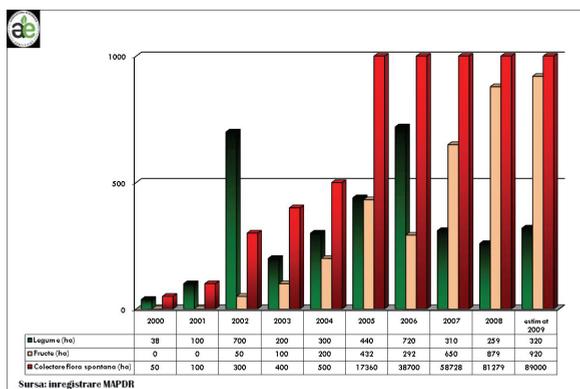


Fig. 3. Structure crops in organic farming (2) [16]



Fig.4. Repartion of the organic foodstuffs (MAPDR)[16]

Principles of organic agriculture

According to the definition proposed by the Codex Committee Food, organic farming is a production management system that promotes and enhances agro-ecosystem health. It further emphasizes the use of management practices of off-farm inputs, taking into account that

regional conditions require locally adapted systems.

Organic farming is an alternative to traditional agriculture, following its malfunction and causes that brought down the resistance of plants, animal health and soil quality and thus human health. Organic farming is based, in principle, on increasing soil organic matter content by using natural organic fertilizers [1]. Organic farming is based on the following principles:

- Long-term protection of soil fertility, by maintaining organic matter levels, encouraging biological and careful mechanical intervention;
- Indirect supply of nutrients for crops, using relatively insoluble nutrient sources to the plant reached by the action of soil microorganisms;
- Sufficiency of nitrogen, through legumes biological nitrogen-fixing and efficient

recycling of organic materials, crop residues and manure;

- Biological control of weeds, pests and diseases in particular through crop rotation, predators, diversity, organic fertilizer, resistant varieties, the thermal and chemical interventions as limited;
- Extensive management of livestock, with attention to their evolutionary adaptation, behavioral needs and animal comfort, in terms of nutrition, housing, growth, development and reproduction;
- Special attention to the agricultural system impact on the environment and biodiversity conservation, of wildlife and natural habitats [16].

Objectives of organic agriculture

Organic farming is based on a number of objectives, as well as on best practices designed to minimize human impact on the environment:

- Crop rotation as a premise to effective use of farm resources;
- Limitation with strictly the use of chemical fertilizers and synthetic pesticides because of their potentially harmful effect on the environment;
- Not use genetically modified organisms;
- Encouraging a diverse ecosystem, to maintain soil fertility and control of pests by natural means (such as use of manure as fertilizer from animals and provenders produced on farm);
- Choice of different plant species and animal breeds that are better adapted to local conditions and potential problems related to pests and diseases;
- Livestock in freedom or open shelters and feeding them with organic provenders;
- Use of animal husbandry practices adapted to each race in hand [8].

In conventional farming is practiced especially monoculture their entire agricultural area, crop rotation is greatly reduced, using fertilizers and pesticides widely synthetic while producing a great degradation of soil, pollute nearby streams and endanger extinction some species of birds or insects.

Therefore, it is necessary to change the traditional methods of producing food, injurious to fauna and flora, with other less

harmful methods of their organic farming methods promoted [13].

The bio or organic farms put great accent on work with the environment. Obviously the agriculture never can be 100% harmless to the environment, but by bio practice is trying to decrease its negative effects [10].

In our days, manufacturers tend to organic crops from which results products are not so good looking, but are healthy, and keep the smell and the taste specific.

Switching from conventional to organic farming is done gradually, so that economic structures do not feel the effects of decreased productivity, and producers to gain confidence in organic systems.

Thus, to be recognized by the Ministry of Agriculture and Rural Development of Romania, the transition from conventional to organic farming is done by following the conversion period, which the lasts crop production two years for annual crops and three years for crops perennial.

Steps for the transition from conventional to organic agriculture, established by the Ministry of Agriculture and Rural Development officials in Romania and recommended to any willing producer are: information, testing opportunity, conversion planning and implementation of conversion.

The major disadvantage of organic farming is the actual time of plant growth. It is longer, vegetables and fruits being forced to mature. Production costs are lower than when using chemicals [11].

Organic products are more expensive than the conventional products, are difficult to obtain but are the healthiest. Organic farming is the new trend in agriculture and in Romania was expanded rapidly. Consumers are becoming more and more aware of the importance of healthy food and the need to protect the environment [12].

CONCLUSIONS

Organic farming is a better alternative to the conventional, because nonconformities which appear and the causes that brought down the resistance of the plants, quality of soil and also human health. Organic farming refers and is

based primarily on soil productivity by using natural organic fertilizers.

The future of agriculture is based on the production of healthy, tasty, optimizing the surroundings, protection of soil pesticides and chemicals, also take care by the food safety. Compared with conventional agriculture is practiced only in monoculture and pesticides and fertilizers used in large amounts, organic farming is gaining more ground as it takes care of the environment, the health of consumers. A disadvantage of organic farming is that the products need more time to growth and also have a higher price compared to the conventional.

The most consumers are aware that the most important is health.

Organic agriculture can also leads to increase incomes and also increase agricultural productivity using technology with reduced costs and required so as to not cause environmental damage.

REFERENCES

- [1] Grigore, A.A., Abargaonitei, S.V., Nancu, D.V., Ghiculescu, R., 2008. *Agricultura Ecologică În România, Diagnostic Și Perspective*. Universitatea de Științe Agrigole și Medicină Veterinară, Iași, p 195-198.
- [2] Alexandri, Cecilia, Davidovici, Gavrilescu I.D. coordonatori, 2003. *Tratat de Economia Agriculturii*. Editura Expert, București.
- [3] Gruia, R., 1998. *Managementul eco-fermelor - bazele conceptuale și metodologice*. Editura Ceres.
- [4] Hamm, U., Michelsen, J., 2000. *Analiza piețelor de produse organice din Europa*. În cadrul celei de-a 13-a Conferințe Științifice Internaționale, IFOAM & FIBL. Basel Elveția, p 1-68.
- [5] Lampkin, N., 1999. *Organic Farming in the European Union – Overview*. Policies and Perspectives, p 23-30.
- [6] Lăcătușu, Gh., Petre, Șt., Staicu, Mara-Monica, 2002. *Agricultura României în contextul integrării în Uniunea Europeană*. Editura Corvin, Deva, p 3-11.
- [7] *Strategia cu privire la soluțiile de armonizare a Regulamentului Internațional al agriculturii organice*. Geneva, Grupul de lucru al UNCTAD, FAO și IFOAM pentru armonizare și echivalență în agricultura organică, 2005, p 1-68.
- [8] *** Agricultura ecologică, http://ec.europa.eu/agriculture/organic/home_ro, data accesării 20-05-2012.
- [9] *** Proiectul ecologic românesc, <http://proiectulecologicromanesc.ro/marian-cioceanu-promoveaza-agricultura-ecologica-in-romania/>, data accesării 20-05-2012.
- [10] *** *Agricultura România, Ferme bio versus ferme conventionale*, <http://agricultura-romania.ro/ferme-bio-versus-ferme-conventionale/>, data publicării 01-02-2011.
- [11] *** <http://www.ifoam.org/whoisifoam/index.html>, data accesării 20-05-2012.
- [12] *** <http://www.biofach.de/main/Page.html>, data accesării 20-05-2012.
- [13] *** www.bioagro.ro/, data accesării 20-05-2012.
- [14] *** Ministerul Agriculturii și Dezvoltării Rurale din România, *Programul Național de Dezvoltare Rurală 2007 – 2013*, www.madr.ro, data accesării 20-05-2012.
- [15] *** Eurostat, http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Organic_farming_statistics, data accesării 20-05-2012.
- [16] *** Bios, <http://www.bios.org.md/doc.php?l=ro&idc=157&id=406> 20-05-2012.