

## THE ANALYSE OF THE ROLE OF ORGANIC FARMING IN PROVIDING HEALTHY EATING FOR POPULATION

### **Abstract**

In Europe Union, the ecologic agriculture is a new area of interest, dynamically and with perspective. This is one of the principal segments of sustainable development process in the rural space. the ecologic agriculture can conduce to: the increase of biologic diversity for the plants and the animals, breed the biologic activity of the soil, maintain the fertility of long-term soil, recycling of residuum from the agricultural production, obtain clean products, reduce the environmental pollution, the health protection, the creation of a friendly relations between the productive activities and the preservation of environment. the use of biocontrol agents as an alternative to synthetic, chemical fungicides that are presently used to control postharvest pathogens, has many constraints and obstacles that make it difficult to implement their use as a practical control strategy. This article is an attempt to examine the problems of ecologic agriculture UE in ensuring consumer health.

**Keywords:** organic farming, sustainable development, nutrient pollution, pest biocontrol, consumer health.

**JEL CODES:** I15, O13

## **ANALIZA ROLULUI BIOAGRICULTURII ÎN FURNIZAREA ALIMENTAȚIEI SĂNĂTOASE PENTRU POPULAȚIE**

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### **Rezumat**

În Uniunea Europa, agricultura ecologică reprezintă un nou domeniu de interes, dinamic și cu perspectivă. Aceasta este una dintre principalele segmente ale procesului de dezvoltare durabilă în spațiul rural. Agricultura ecologică poate favoriza creșterea diversității biologice pentru plantele și animalele, rasa activitatea biologică a solului, menține fertilitatea solului pe termen lung, reciclarea rezidului din producția agricolă, obținerea unor produse curate, reduce poluarea mediului, protecția sănătății, crearea unei relații de prietenie între activitățile productive și conservarea mediului. utilizarea agenților de biocontrol, ca alternativă la fungicide sintetice chimice care sunt utilizate în prezent pentru a controla patogeni după recoltare, are multe constrângeri și obstacole care fac dificilă punerea în aplicare. Acest articol este o încercare de a examina problemele UE agriculturii ecologice în asigurarea sănătății consumatorilor.

**Cuvinte cheie:** agricultura ecologică, dezvoltarea durabilă, poluarea cu nutrienți, dăunătorilor biocontrolului, sănătatea consumatorilor.



## 1. INTRODUCTION

Society is aware of social, environmental, health and economic crises, but their agricultural dimension is not always obvious. Intensive, pesticide-based farming has one dramatic and indisputable role in the progression of many diseases (cancer, neurodegenerative disease and autoimmune ones, allergies, etc). It causes huge environmental damage (destruction of landscapes, water pollution, erosion, soil depletion), especially biodiversity (bees are an alarming indicator). For many years, it has accumulated evidence of pesticide toxicity and more people doubt their industrial capabilities to properly feed humanity. However, at political national and European does not reflect this concern at all.

In support of intensive agriculture, genetically modified organisms (GMOs), the slogan is feeding a growing population, but the real goal is to increase profits and monopoly of biological by seed licensing. The purpose of this article is to contribute to the greening of social consciousness, a goal that cannot be done at an intuitive level but requiring systemic attitude and fundamental research.

## 2. RESULTS AND DISCUSSION

Man has changed and continues to modify natural ecosystems, huge areas are occupied with monocultures. Through all his irrational activities, he has altered its natural food chains, and now is at the end of more and more artificial chains. To assure a healthy nutrition, man must maintain and reestablish biodiversity of spontaneous organisms and the cultivated ones. Otherwise, "sick foods" will get us ill. The current western food is very expensive from an ecologic point of view. The food chain, where man is the last link is characterized by great voracity in the consumption of land resources: for a food calorie that we get on our plates it is spent around 13 calories on fossil energy. This proportion is determined by four characteristics of current diet in the West, off- season food, food without frontiers, predominant food of animal origin, processed food, frozen, overpacked. Such an agro-food system exerts a strong pressure on the planet. Western Europe has to acknowledge a disturbing truth: if all the inhabitants of the Earth would eat as Westerns, three planets would be needed to satisfy their needs (Andreev and Gumovschil, 2011).

The ecological concept of sustainable development includes ensuring humanity with healthy food, because 80% of the diseases are related to diet. Cancer, allergies, infertility- here are just a few of the diseases that can be incriminated for an unbalanced diet with polluted food, transformed in technological processes. Analyses carried out in 2002, at the request of the European Commission have shown that 53% of the fruit, vegetables and cereals consumed in that year in France, contained

pesticides residues. Consumed regularly in small doses these chemical products accumulated in the body can have carcinogenic, mutagenic, allergic, neurotoxic effects etc.

A consequence of environmental and food products pollution is reduced infertility. This way, frequent contact of vintners with pesticides, fungicides used to treat vines often lead to their sterility or is manifested in their offspring by abnormalities of the genital system (Martin, 1996).

The problem of male reproductive apparatus is as serious as the greenhouse effect, say researchers at the University Hospital in Denmark. Scientists in Denmark, USA and France affirm that the chemicals that invade the environment disrupt the endocrine system. It is known that disturbances of the endocrine system caused by pesticides are responsible for the "feminization" of many wild species (alligators, frogs, fish, birds). Human beings cannot avoid this phenomenon. The molecules incriminated in the phenomenon of feminization are, first of all, bisphenol and phthalates, ubiquitous substances in everyday life: components of plastics, food packing, etc. (Gress et al., 2014).

Manufacturers of these goods diminish the risks presented by bisphenol and phthalates, thus fighting for their ban is fierce. Consumer education, particularly the younger one, could help solve the problem.

Organic farming seems to be the only solution. It has its roots in Germany, at the beginning of century, with R. Steiner's philosophical theory-anthroposophy. In this theory, man is considered to be part of a cosmic balance, that is, to live in harmony with the world around him. He has to find a balance between spiritual and material. The emergence of ecological agriculture, at the end of the 20th century, in the Europe Union, was conditioned by bankruptcy of agroecosystems based on chemistry and mechanization. Organic farming has begun to grow in the years 2002-2004, when the dialogue with a number of organizations from E.U. Commission started on the share of production of vegetables, fruits, grapes, berries, produced in the Europe Union and exported to E.U. countries. Taking into account the fact that Moldova remains a country with a developed agriculture and that the production of the most important branch of the national economy- the agro-industrial complex is consumed on the spot and another part is exported, appeared a problem of major importance, ecologic agriculture (Volosciuc, 2009).

Many pesticides are difficult to degrade, causing food, soil and water contamination with toxic residues. It would be desirable for pesticides to be depleted once the goal is achieved, in reality they enter a circuit that affects terrestrial ecosystem. The biggest drawback of the use of pesticides in agroecosystems is their acute toxicity to animals and plants subject to their action.

For the development of organic farming methods are indispensable in the Europe Union, organic and biological plant protection. In this area, the contribution of Institute of Plant Protection and Ecological

Agriculture of the ASM is important because harmless ecological means are being developed, which enable effective control of harmful organisms. Researchers at this Institute identify components and improve the synthesis and application patterns of sexual pheromones, biologically active substances, extracts of plant origin, implements forecasting methods of diseases for integrated plant protection systems, develops organic crop protection technologies. Organic preparations have been developed for plant protection, pest control that meet ecological requirements such as Funecol, Pelecol, Reol.

Phytopreparations are means of perspective of the biological protection of plants, having more advantages: they are, to a large extent, effective, environmentally and human friendly, rapidly decompose into agrocenosis. Biological control of plant diseases through extracts from plants gain more and more importance, specialty literature shows that the use of extracted or fermented natural products from various sources, mixtures and ingredients have multiple effects on the host and on the pathogen are an important mechanism of biologic control.

The seed fund is another serious problem of organic farming. Seeds are the first link in the food chain. The one who controls seed production is lord over the entire agricultural sector, he can juggle fertilizer markets, chemicals and equipment. Decades ago, France had the largest variety of fruit in the world, while at present there are sold only five types of apples. The varieties that have naturally resisted unfavorable climatic factors and pests have been eliminated (Gaina, 2009).

However, the famous Golden was imposed on the market. When cultivating the Golden variety, thirty pesticides are used per year, which represents a financial hand for agrochemical producers. European Union, at the pressure of food industry, has gradually curtailed the millenary right of peasant to sow, conserve and commercialize their own traditional and regional seeds

Currently, only farmers' associations have the right to conserve traditional seeds for ten years. They can sow and sell them only in the region of origin. In Europe, 80% of the vegetables and fruit grown in the last fifty years have disappeared. The causes? The food industry need large quantities of "homogeneous" raw materials and requires peasant few varieties of cereals, vegetables and fruits. They must be cultivated in large quantities in any climatic and soil conditions (Letter, 2005).

For organic farming, it is very important to use department varieties, adapted to the particularities of local nature and climate. These varieties will survive more than others, even in problematic years, and Europe Union, as we know, belongs to the category of countries with unsustainable agriculture. Using imported seeds means that any drought that can lead to mass destruction of the harvest will directly threaten national security. In recent years, in our country, on the seed market, a very worrying situation has been created. More than 80-90% of the seeds sold in Moldova are imported. Republican selection

Institutions cannot function in a corresponding way, receiving poor support from the state. At the same time, foreign companies, having insufficient financial and advertising opportunities, have convinced farmers to use their seeds. There is a complete degeneration of the seed fund, while for organic farming it is very important to use district varieties, adapted to the particularities of our climate.

In the Europe Union, the preservation of the genetic resources of the crops and domestic animals is the objective of branch Institutions (collection of species, varieties, forms, breeds, etc.). Conservation of local genetic resources is carried out by the population in agricultural individual households. Preference is given to cultivating native forms of beans, maize, sunflower, vines and orchards resistant to negative biotic and abiotic factors. Usually, this process is passive and some forms are lost. Thus, preservation of domestic animals is carried out. Currently, there are no special programs of research and maintain the native genetic diversity, which is why, the situation regarding their actual value is unknown.

The loss of biological diversity is now one of the major threats to the environment and sustainable development. The variety of plants for food production is below constant pressure. A consequence of biodiversity loss may be our irreplaceable capacity to cultivate plants for food, which will be adapted to climate changes and new plant diseases.

Demand for food without pesticides or artificial fertilizers increased among European consumers as a result of scandals from food industry and of extremely grave information about new biotechnologies of genetic changes.

The implementation of agro-environmental practices has been carried out on some lands or pilot households, but there was neither a national or agro-ecological scheme that would be financially supported and would really be for farmers. At the current stage, farmers in the Europe Union have limited financial and material capacities.

Information from bibliographic sources shows that organic production is only proportionate of 0,3% capitalized on the domestic market, most of it being exported. The main ecological products sold through commercial network are, occasionally, products of vegetable origin in fresh state. Currently, no specialized store has the capabilities to follow the rules of storage/ handling/ presentation for ecological products. The durability of agro-ecological measures, as well as organic farming is the absence of support programs of medium and long term periods.

In recent years, the concept of intensive organic farming is in fashion. This concept was presented at the Grenelle Environment Forum in August 2008 by Michel Griffon, a CIRAD researcher and Bruno Parmentier, director of ESA Group (Angers Graduate School of Agriculture). This concept involves

enhancing the natural mechanisms of ecosystems. This means that, where appropriate, the improvement of the structures and composition of the soil through earthworms activity, increasing the period of photosynthesis for biomass production, maximum biologic control of diseases and pests etc. Unfortunately, this approach does not exclude using fertilizers, synthetic pesticides and genetically modified organisms (GMO).

## CONCLUSION

Generalizing the above mentioned, we believe that, in order to ensure the population with healthy food, eco-friendly farming, the following lines of action could be effective:

- Financial support for farmers in the conversion period to organic farming;
- Prioritize environmental education of the population by designing and implementing a national action plan to raise awareness to the issue of environmental protection in general;
- Media coverage of important environmental issues: genetically modified organisms, Persistent Organic Pollutants, polychlorinated biphenyls, climate change, in order to protect not only the environment but also human health of their harmful effect;
- Creation and development of specialized laboratories for pesticide detection of genetically modified organisms;
- The association of traditional, indigenous seed producers for the purpose of defending interests. Conservation of traditional seed must become a state issue;
- Cultivation of seeds from seed banks in the fields, in the origin areas for adaptation to stress factors: drought, low temperatures, diseases and pests. The government must take measures for the conservation of traditional seeds.

Organic foods cannot feed the entire population of the globe today. Important is the possibility of choice. Consumers, choosing between conventional and organic aliments become a politic force which will determine the type of agriculture that will feed us.

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