

THE ORGANIC AGRICULTURE – A WAY TO PROTECT THE ENVIRONMENT

AGRICULTURA ORGANICĂ - MIJLOC DE PROTECȚIE A MEDIULUI

ADAMOV TABITA CORNELIA*, IANCU MIHAELA*, IANCU T.*, BRAD I.*

** Faculty of Farm Management, Timișoara, România*

The future of the agriculture is a problem very frequently discussed by the specialists. During these debates, the organic agriculture has an advantage. The organic agriculture is taking into consideration two aspects: the human being and the environment. It is based on the prohibition of using chemicals like pesticides, herbicides or chemical fertilizers. This will offer healthy and natural products, but also will protect the environment. The usage of chemicals harms the environment and they remain in the soil for a long time. The substances used to protect the crops destroy the biodiversity, killing the insects, not only the harmful ones. The preservation of the biodiversity and the quality of the environment is an important objective for the beginning of this millennium, extended by the concern for the population health, for food safety assurance and for the improvement of life conditions. The existence of the future human society depends on applying in practice the concept of lasting economical development.

Key words: organic agriculture, environment protection, economical development

Introduction

Today we can not speak about economical development without taking into consideration the environment. The development of the agriculture must fit into the potential of the ecosystems and must not harm the consumers' health. Also, the development of the rural areas can not be realized only based on the economical conditions, but the social and economical characteristics should be taken into consideration. Other advantages of the ecological agriculture, like the multifunctional structure of the farms and the favorable effects of the environment, landscape and local infrastructure should also be taken into consideration.

Materials and Methods

This type or form of economical development, which ensures the fulfillment of the present consumption needs without compromising or prejudicing the needs of the future generations, implies a new attitude toward the environment

and the change of the relationship between the human being and the nature by establishing a balance between them.

In the developed countries, the agriculture and the environment are supported by a preferential protection system from the society by stimulating the agricultural production methods compatible with the principle of obtaining healthy agricultural products, of maintaining the soil fertility, of optimizing the quality of the agricultural production and of the environment.

The organic agricultural system is based on the compliance with some strict production rules and principles according to the community legislation and the national legislation concerning the implementation of the community regulations.

The biological agriculture represents a different method to execute the agricultural works by maintaining an ecological balance where the products are obtained by maintaining a balance in the system soil – plant – animal – natural cycles of development, contributing to the lasting development of the rural areas and to the protection of the environment and guarantees good life conditions for the animals.

According to the definition given by Food and Agriculture Organization (FAO) and by the International organization for safety in “Codex Alimentarius”, the ecological agriculture represents an “integrated system for the organization and administration of the production process which is contributing to the support and consolidation of the agro-ecosystem resistance, including biodiversity, biological cycles and the biological activity of the soil. The ecological agriculture encourages the usage of some appropriate administration practices instead of introducing some products realized outside the farm and to take into consideration that the conditions of each region need specific systems, very well adapted to the specific of the region. This can be realized by using, where possible, of agronomic, biological and mechanical methods instead of using synthetic materials for some operations of the system.”

The ecological agriculture intends to obtain high quality certified ecological food products of vegetal and animal origin, by protecting the environment and limiting the pollution risk and maintaining the soil fertility.

Results and Discussions

1. Agricultural products, lower pollution of water and air

The neutralization of pesticides (herbicides, insecticides, fungicides) determines a substantially lower risk of agricultural products contamination. This means that the ecological food products are healthy products and safe for human and animal consumption.

The presence of pesticides in the drinking water became a problem in the entire world, even in the countries using small quantities of pesticides and a high water potential (example Sweden) and the conventional agriculture is a source of polluting the water with nitrates, pesticides, bacteria.

2. Safe working conditions for the farmers

It is known that many farmers die each year as a result of using pesticides, especially in undeveloped countries. Even in the countries where there is a modern agriculture and where the rules of work safety are known, the cases of some cancer types are more frequent among the farmers than the rest of the population, because of the usage of pesticides.

3. Biodiversity

The usage of pesticides represents a threat both for plants and for animals and also for the human beings. The pesticides threaten the survival of some wild animal and plant species, but even more it limits the general biodiversity in cultures and neighbouring areas.

The crop rotation practiced in the ecological farms maintains the durability of the soil, determines a small number of problems caused by diseases, pests and weeds, contributes to a diversified landscape and ensures a high biodiversity and, in the same time, protects the farmers against the economic disasters caused by the decrease of prices, by the activity of some stress factors or by natural disasters.

The decrease of the biodiversity in the conventional agricultural systems is caused by: the specialization, the intensification, the lack of mixed farms, the usage of pesticides, the lack of unused areas

4. Fertile and healthy soil

The fertility and the health of the soil are maintained by biological practices like: rotation of crops, manual work, weeding, natural fertilization, etc. The conventional agriculture determined the decrease of organic substance content from the soil and the increase of toxic compounds by using pesticides. Using organic fertilizers in the ecological agriculture, the percentage of organic substance of the soil will be increased and maintained.

5. Decrease of losses of nutritional elements by leaching

The contribution of the organic fertilizers and the neutralization of chemical fertilizers decrease the risk of washing the nutritive substances which represents a huge problem in many countries and a threat for the drinking water like: the water from lakes, rivers, seas and oceans.

6. The decrease of soil erosion

Both the soil improvement and the decrease of soil erosion can be realized by maintaining the field covered as long as possible with different types of covering crops. The soil erosion is determined by the decrease of organic substance content from the soil in the conventional agriculture by using synthetic chemical fertilizers which determine also the damage of the soil structure.

7. A better management of the water factor

The improvement of the soil and a better covering lead to the decrease of water consumption in the ecological agriculture. The high level of organic substance content in the ecological systems leads to a better retention and preservation of the water in the soil having as result the decrease of irrigation needs.

8. The high nutritive quality of the ecological products

The ecological products are characterized by a high content of dry matter, for example amino acids, vitamins, minerals, oligoelements.

9. The minimization of the agriculture contribution to the global environmental problems

The ecological agriculture minimizes the global environmental problems like: acid rain, global heat, biodiversity decrease and desertification. The ecological agriculture reduces the gas emissions responsible for the greenhouse effect (CO₂, methane). Many studies showed that the CO₂ emission in an ecological system is 40-60% lower at a hectare's level than in a conventional agriculture system.

10. The reduced usage of non-regenerating resources

The concept of "low inputs" in the ecological agriculture leads to the reduction of the transportation and of other inputs. The Swiss researchers showed that the same food quantity produced according to the ecological agriculture principles has a direct or indirect energy input lower with 19% compared to the conventional agriculture system.

11. The ecological agriculture contributes indirectly to the increase of conventional agriculture systems productivity

The conventional agricultural exploitations have some benefits as a result of the introduction of pest and diseases control for the ecological agricultural exploitations. This is due to the fact that the useful micro-organisms and the insects reach also the conventional cultures which lead to the decrease of the damages provoked by the diseases and the pests.

Conclusions

Due to the fact that the ecological agriculture has a major contribution to the lasting development by increasing the biodiversity, the environment protection and the increase of the soil fertility, the producers from this sector are helped by the European Commission agro – environment programs.

In conclusion, the ecological agriculture should not be generalized nor ignored. There are situations where this represents the only solution (agricultural units, food producers and traders of food products with serious environment problems – physically and biologically damaged fields, surface and phreatic waters and soils with organic and mineral substances, low biodiversity, etc.), in other situations it represents an important help (poor and bankrupt economic agricultural units) and in other cases it is not justified (large and rich farms or agricultural associations and societies).

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