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ENVIRONMENTAL BENEFITS OF ORGANIC AGRICULTURAL PRODUCTION

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Our numerous studies show that increasing the competitiveness of agricultural production is not possible without ensuring its environmental component, the main component of which is the introduction of organic farming methods. As the current increase in the range of food products is associated with the rapid development of a market economy and increasing consumer needs of society, which has led to a deterioration not only of their quality but also a negative impact on the environment (use of intensive crop technologies monocultures, etc.).

Due to the significant deterioration of the environmental situation in the world and the need to ensure food security, the world community is increasingly emphasizing the need to introduce agricultural practices that: do not use synthetic chemicals (fertilizers, pesticides, antibiotics, etc.); carries out minimal plowing of the soil; does not use genetically modified organisms (GMOs); covers various areas – crop production, animal husbandry, poultry, horticulture, etc [1-3].

Thus, organic agriculture, in essence, can be defined as a multifunctional agroecological model of production with defined goals, principles and methods, which is based on careful management (planning and management) of agroecosystems (Fig. 1).

1. Objectives of organic agriculture:

- creation of a viable management system;
- increasing the level of biological diversity, stabilizing the biological balance in nature;
- production of high quality products and raw materials that do not harm the environment, human health, animals;
- improving the sanitary condition of soil, plants, animals and maintaining a balance between them;
- application of ecologically safe methods and means of management.

Principles of organic agriculture:

- environmental friendliness – based on living ecosystems and natural cycles;
- ensuring and preserving the health of soil, plants, animals and humans as a single ecosystem;
- responsibility for the health and well-being of present and future generations, the environment;
- justice for the environment and equal opportunities for everyone.

3. Methods of organic agriculture:

- agroecological methods of pest and disease control;
- application of organic fertilizers (greens, mulch);

- use of ecological packaging (glass, paper, biosoluble packaging, etc.);
- reasonable use of the natural environment;
- taking into account the natural capabilities of the ecosystem.

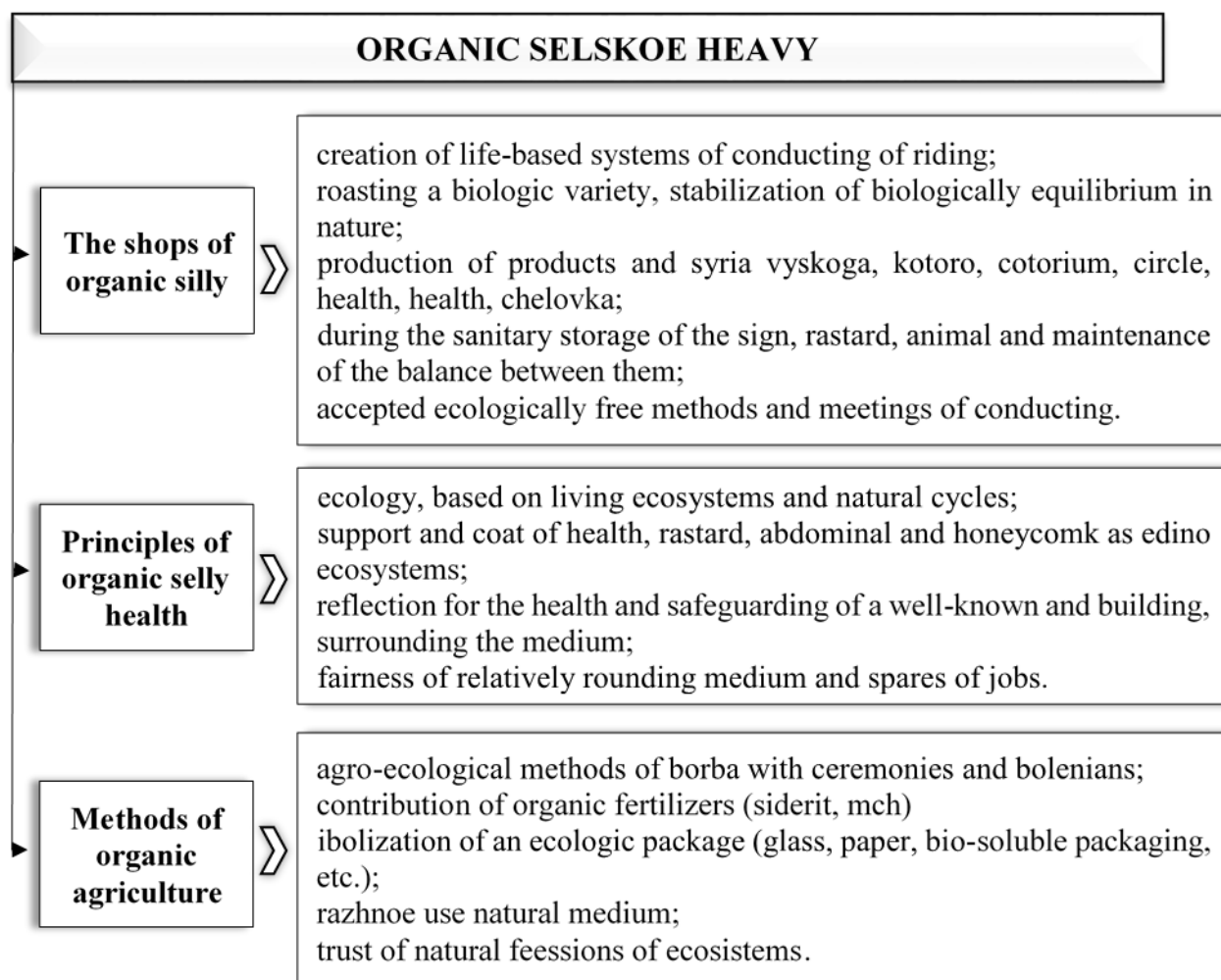


Figure 1 – Model of organic agriculture

Thus, the feasibility of introducing organic agricultural production is due to the need: reproduction of soil fertility and preservation of the environment; development of rural areas and raising the living standards of the rural population; increasing the efficiency and profitability of agricultural production; providing the consumer market with healthy quality products; strengthening the export potential of the state; improving the country's image as a producer and exporter of high-quality useful organic products; ensuring food security of the country; improving the general welfare of citizens of the state [4,5]. First of all, organic agriculture is based on methods of minimal tillage, which improves and preserves its structure, helps to preserve the microorganisms that send it, prevents the decomposition of humus by avoiding deep and intensive loosening. It also improves the elasticity and protection against soil erosion, its water balance. However, despite these benefits, abandoning plowing poses certain challenges. For example, weeds can be significantly increased or nutrients can be disrupted.

However, in order to increase the efficiency of agriculture and their compliance with the principles of organic agriculture, it is possible to use tillage systems that minimize the depth of cultivation and combine technological operations, use of the latest technologies, which allows to comply with domestic and international legislation products and have a positive impact on the natural environment [6].

Crop rotation plays a significant role in the implementation of the general principles of biologization and greening of crop production, on which organic farming is based. Scientifically based crop rotation is the main in ensuring and maintaining phytosanitary well-being of fields and crops, the cleanest measure against weeds, pests and diseases, a source of enrichment of beneficial soil microflora, soil organic matter, enrichment and nitrogen maintenance. general moisture balance within not only crop rotation, but also the entire agro-landscape or even agroecosystem. According to our research, it is recommended to use the classical principle of crop rotation on the basis of proper organization of the territory and the optimal structure of areas for specific soil and climatic conditions of each farm [7].

Also, considerable attention in the system of organic farming is paid to sideral crops, which are grown before planting the main crop, to enrich the soil with useful elements. They restore humus reserves, improve the structure, increase the fertility of the upper arable layer. The value and importance of green manure crops is not limited to the property of an excellent substitute for traditional organic fertilizers. Widespread use of these crops also increases the efficiency of nature management, increases soil fertility, obtaining more units per unit area. In addition, greening significantly improves the environmental situation, which is now becoming one of the vital problems.

In order to increase the productivity of organic production and product quality, biological factors to increase the natural fertility of soils, agroecological methods of pest and disease control, as well as the benefits of biodiversity, including local and unique species, varieties, breeds, etc. are used.

According to our research, organic products are currently in high demand worldwide, and the number of its producers and agricultural land under its production is growing every year. As practice shows, the use of organic farming makes it possible to obtain stable, bioclimatic, energy and economically justified productivity of arable land, improve the quality of crop products, preserving and reproducing soil fertility.

Organically grown products must be environmentally friendly and meet national and international quality standards. To do this, producers of organic raw materials and products must comply with the standards of organic agriculture and labeling requirements in accordance with the markets. However, all certification standards provide for compliance with the main principles of organic agriculture, which are designed to strengthen the organic movement in full.

They are applied integrally and inseparably from each other, are the basis for the development of various programs, concepts, standards and dissemination around the world. They are formulated as ethical principles of health, ecology, justice and care. Thus, the production of organic agricultural products for consumption is appropriate and in conditions of deteriorating environmental conditions – necessary. Also from an environmental point of view, organic agriculture performs two important functions – nature protection and environmental protection. The function of nature protection is

reflected in the conservation of agricultural biodiversity, or agrobiodiversity, which today is an urgent task of environmental policy in many European countries.

At the same time, despite the foregoing, not all domestic manufacturers may at their own expense to transition from traditional to organic production. The latter is a much more complex system and requires a more suspension approach to implementation. Therefore, the transition of agricultural producers to organic farming methods is possible only if they are aware of the benefits of organic production compared to traditional. Organic production benefits society as a whole, and not a specific manufacturer of organic products and has a number of economic, environmental and social advantages with the proper introduction of modern technologies for growing crops and animal breeding in accordance with the principles and requirements of organic production. However, in market conditions, it is necessary to create and efficiently manage the market for organic products, which consists of: consumer, manufacturer, supplier, seller, distributor, legislative and regulatory bodies, etc.

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