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ORGANIC PLANT FARMING AS AN ALTERNATIVE PRODUCTION OF SAFE QUALITY PRODUCTS

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Ukraine is one of the leading suppliers of agricultural products on the world market. The main support of the Ukrainian economy is the agricultural sector of Ukraine, which forms about 10% of GDP. What allows this direction to be the primary filler of the country's budget and to orient the national economy towards export relations.

Such active participation of Ukraine in international relations presupposes the development of the country's economy. According to the results of the World Competitiveness Rankings, our country took 54th place in 2021. The availability of innovative technologies, digitalization of the production process, and political and social support in the middle of the country became the determining factors for assessing competitiveness. This rating assesses the extent to which countries develop, attract and retain highly qualified personnel who provide businesses with added value.

The estimated indicators obtained last year may change completely due to the military actions that are taking place in the greater territory of Ukraine. Until the end of the war, it is impossible to accurately calculate the amount of damage and losses suffered by the Ukrainian agricultural sector. According to a preliminary assessment, the agricultural lands suffered two significant types of damage - mine pollution and direct physical damage. Pollution of cultivated land has become the biggest environmental problem of Ukraine.

In the front-line, occupied and de-occupied regions of the country, contamination of agricultural land with unexploded ammunition and mines prevails, which poses a mortal threat to Ukrainian farmers during field work. For further safe use of such territories, it is necessary to carry out demining, which requires the involvement of additional special services and capital investments.

Also, a negative effect on the state of the fertile soil layer is caused by the left funnels from artillery shelling and missile strikes, as well as damage to the soil by tank tracks and other military equipment. Such lands require further restoration, including reclamation and leveling of the earth's surface. In the southern region of Ukraine, where high crop yields were achieved with the help of irrigated land reclamation, the damaged irrigation infrastructure needs to be replaced and repaired.

The entire territory of the Kherson region suffered all kinds of these damages. According to analytical estimates, it will take 8-10 years to restore the ecological state

and soil fertility for agricultural purposes. This is quite a long time, and the country needs to be restored already next spring. So this is a good moment to reorganize the management of the agro-industrial complex for high-quality production of plant products.

Alternative measures of agricultural management involve the introduction of an organic system of growing plants, which is successfully used in the countries of Europe, Canada and the USA. Such a system is based on the introduction of scientifically based crop rotations, the use of crop residues, manure, composts, legumes and plant fertilizers, organic production waste, mineral raw materials, mechanical tillage and biological means of pest control with the aim of increasing fertility and improving the structure of soils, providing complete nutrition of plants and control of pests and weeds.

Transferring to organic agriculture, which will be carried out as part of the European policy "European Green Deal" until 2050, they planned to turn Europe into a climate-neutral continent. For the implementation of such a project, one of the first points is to reduce the negative impact on the natural environment, due to the transition of agricultural enterprises to the system of organic farming. The sphere of economy of each state directly depends on the preservation of the environment. Ukraine belongs to agrarian countries, so this factor is of particular importance for survival. The implementation of such an agribusiness strategy encourages the development of an environment-friendly attitude towards the farm — organic farming.

Organic cultivation of plants is based on the use of the latest technologies, aimed at protecting natural resources and reducing mechanical soil cultivation, excluding the use of any synthetic material. The priority trend for organic farming is the use of materials and technologies that improve the ecological balance in natural systems and contribute to the creation of sustainable and balanced agroecosystems.

Organic farming plays an important role in crop rotation. because scientifically based crop rotations provide regulation of a positive balance of humus and nitrogen, water and phytosanitary regime of the soil. Rejection of pesticides and other synthetic mineral fertilizers involves the introduction of crop rotation with alternating crops, the selection of which is based on the biological characteristics of each selected crop. Adherence to strict rotation makes it possible to create favorable conditions for the further growth and development of subsequent crops, without using additional chemical and synthetic means.

The use of mineral fertilizers and pesticides contribute to the entry of various heavy metals into the soil and groundwater, which also have a negative impact on the quality of the final products. Chemical elements with a density of more than 5 g/cm³ are conditionally classified as heavy metals. A significant number of them in small doses are useful for plants, animals and humans, but at higher concentrations they have a toxic effect.

Plants, animals and humans are adapted to the natural background content of heavy metals in the soil. If some elements are insufficient in the soil, it is recommended to apply them in the form of microfertilizers. But now, in connection with the intensive development of industry and transport, the use of various chemicals, there is

contamination of significant territories with metals and non-metals, which even leads to the formation of biochemical anthropogenic anomalies. In order to reduce the contamination of plant products with heavy metals, one of the solutions is the introduction of organic fertilizers, such as humus or peat.

With the transfer of agriculture to organic farming, agricultural producers receive not only high-quality, ecologically clean plant products, but also contribute to the natural restoration of the environment by improving the general condition of soil and water.

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