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THE HISTORY, CURRENT STATE AND PROSPECTS FOR THE IMPLEMENTATION OF ELEMENTS OF BIOLOGIZATION FOR THE EFFICIENT CULTIVATION OF CORN IN ORGANIC FARMING OF THE SOUTHERN STEPPE OF UKRAINE

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ABSTRACT

It is established that at the beginning of the 21st century due to significant exploitation of land resources of Ukraine, there was a violation of ecological balance in natural agroecosystems, intensified erosion and other degradation processes in soil, which now reached the highest level in the world. Due to the reduction in the use of organic fertilizers, the use of mineral fertilizers and pesticides has exceeded the permissible limits, which has led to pollution of soils, the environment and agricultural products with harmful chemicals. Currently, the use of physiological and genetic characteristics of crops belonging to different biological groups plays an important role in agrarian production in Ukraine. Along with the productive use of the genetic potential of crops, the use of modern innovative technologies, in particular the elements of biologization in organic farming, is of great importance. These include the systematic use of scientifically sound crop rotations, the use of optimal rates of organic and mineral fertilizers, green manure, post-harvest crops, biohumus, and minimize tillage. With increasing aridity of the climate, they adapt to new climatic conditions due to the accumulation and preservation of moisture, which is an effective measure in regulating soil water regime in the arid Southern Steppe of Ukraine. It was found that among the elements of biologization, the maximum use of natural mass of surface and root crop residues and by-products of crops – cereal straw, tops and stalks of corn and sunflower, root crop buds and green manure – is effective. Along with increasing the production of competitive agricultural products of better quality, their use ensures the efficient use of land resources, preservation and reproduction of soil fertility, improving the ecological state of the environment. It is determined that the use of plant residues actualizes the use of modern biodestructors, which are adapted to different soil and climatic conditions of Ukraine and technologies for cultivation crops. Of great importance in the production of corn for grain is the use of effective biodestructors of stubble Ecostern and Cellulad. Such studies are gaining relevance in the arid Southern Steppe of Ukraine, especially in climate change.

Keywords: organic farming, elements of biologization, crop rotations, crop residues, stubble biodestructors, soil water regime, corn for grain.