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12. INTERNATIONAL CONFERENCE ON AGRICULTURE, ANIMAL SCIENCE & RURAL DEVELOPMENT

EDITORS

Prof. Dr. Özlem ÖNAL AŞCI

Prof. Dr. Mehmet Fikret BALTA

Assoc. Prof. Dr. Seyithan SEYDOŞOĞLU

CONFERENCE PROCEEDINGS BOOK



ORDU UNIVERSITY



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THE DEAD ANIMALS IMPACT ON THE ENVIRONMENT

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ABSTRACT

There is a significant number of wild animals in the world that die in natural conditions, but recently, problems of wild animals' mass death or entire herds of livestock farms have become increasingly relevant as a result of sudden nature and technogenic disasters (e.g., flooding, earthquakes) or military impacts [1-3]. In such cases, the decomposition of dead animals could have a significant impact on the environment. Therefore, it is important to investigate and understand the consequences that accompany the process of animal carcass decomposition. The impact on soil is the main aspect of the environmental impact of animal decomposition. Organic matter has been released, which could have both positive and negative effects on soil fertility. For example, some organic matter could serve as a food source for soil microorganisms, which contributes to the decomposition and recycling of organic matter. However, large masses of animal carcasses could lead to oversaturation of the soil with nutrients, which could cause pollution and reduce soil quality. For example, the decomposition of a pig corpse results in a significant increase in soil pH, total nitrogen, phosphorus, and phospholipids [4]. The impact on water resources is the second most important process, which includes the release of various substances that could enter groundwater and lead to water sources pollution and adversely affect ecosystems that depend on the preservation of water resources. For example, the release of ammonia and other nitrogenous compounds from animal carcasses could cause eutrophication of water bodies, leading to excessive growth of algae and aquatic plants. This could upset the ecosystem balance, reduce the dissolved oxygen level in the water, and negatively impact fisheries and other species that depend on clean water environments. Research results confirm that decomposition of corpses increases the number and diversity of antibiotic resistance genes in a large volume of drinking water, regardless of time, demonstrating the temporary persistence of these genes, thereby revealing the harmful effects of animal carcasses [5]. Air exposure occurs when gases such as hydrogen sulfide, methane, ammonia, and other odorous compounds are released. These gases could have a negative impact on air quality, causing an unpleasant odor and the possibility of health problems for people living in close proximity to the places where the corpses decompose. Finally, the environmental impact of animal carcasses could have a significant impact on biodiversity. The decomposition of corpses could attract wild predators and natural decomposers, which could affect the distribution and interaction of species in the natural environment. Depending on the number of corpses and species subject to decomposition, there may be a change in the ecological balance and structure of the ecosystem. The animal carcasses impact on the environment could have a significant negative environmental impact and disrupt ecosystem stability. The decomposition of carcasses contributes to soil and water pollution, reduces air quality, and affects biodiversity. The release of harmful substances and odors during the decomposition process could lead to negative impacts on ecosystems that depend on clean water environments. Related problems could have consequences for human health and natural ecosystems. It is necessary to implement management and engineering measures to prevent and minimize negative environmental impacts: the civil protection system should develop Action Plans to eliminate negative consequences in case of mass animal deaths, which would include measures to search for,

disinfect and properly dispose of animal corpses; monitoring the water sources condition, in particular for the presence of bacteria, viruses and other pollutants.

Keywords: environmental safety, dead animals, corpses decomposition, environmental protection measures, environment