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SPECIAL COMPOSITION OF PHYTOCENOSIS OF TERRITORIES AROUND OF PLACES WAREHOUSES OF AGROCHEMICALS

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Formulation of the problem. Among the general environmental problems associated with the use of chemical plant protection products, it is possible to allocate global migration of pesticides, including trophic chains, the impact on humans directly and through food, the development of resistance to harmful organisms, and several others. The negative impact of pesticides is mainly on agrophytocenoses and their main components: agricultural land, vegetation cover, ground and soil biota, water bodies, including groundwater.

The high level of pesticide residue pollution of different classes and the potential environmental risk of the negative impact of contaminated areas on the natural environment is an actual problem that needs to be addressed. The soils of the territories adjacent to the warehouse are characterized by a certain, unique in each particular unique case, a set of pollutants, and therefore require an individual approach to solving the problem of the soil restoration.

Presenting main material. The research was carried out on a dark gray, podzolized soil on the territory of the sanitary zone of the non-operating structure of agrochemicals in the village Glinsk of Zhovkva district in the conditions of the Western Forest-steppe of Ukraine.

The reaction of plants to pesticides is due to the features of physiological and biochemical processes in plants, which in some cases lead to the rapid elimination of toxicants, in others – to the suppression of vital functions, in the third – to strengthen the work of protective mechanisms that mobilizing additional resources of nutrients to overcome the negative effects of pesticides.

According to observations in the structure of plant groups of territories adjacent to the warehouses of agrochemicals, there are both toxicotolerant and sensitive to the toxic effects of plant species, which is due to the presence of a complex of toxicants and their uneven distribution in the soil. Separating the influence of a certain drug in the field of multicomponent soil pollution is impossible. One can only estimate the response of plants to the entire complex of pollutants present in the soil under the given environmental conditions.

To assess the plant grouping of the sanitary-protective zone of the composition of agrochemicals of Glinsk of Zhovkva district were analyzed such indicators as the species composition of phytocenosis, the type of saturation and vegetation density per 1 m^2 of the study area at different distances from the source of pollution.

To detect changes in the plant group with a separation from the source of pollution, the territory around the warehouse space with a radius of 50 m was conditionally divided into 12 sectors (experimental plots) located in the southern, northern, eastern and western directions at distances 1-50 m from the warehouse. In each of the sectors, they set up 3-4 accounting frames.

The plant grouping of the studied territory is represented by 21 species of wild plants. It was revealed that with the distance from the source of pollution in all directions the density of the vegetation and the species richness of the plant group increases. Comparison of accounting plots by species and density of vegetation at different distances from the source of contamination during the experimental years showed that there is a gradual overgrowth of the pollution area.

The smallest species saturation and the minimum vegetation density are observed in the immediate proximity to the source of pollution (2-10 m). These indicators indicate the presence of phytotoxicants in the soil at significant concentrations, which excludes the presence of sensitive to the toxic effects of plant species.

In the case of multicomponent soil pollution, the reproduction of plants with seeds has a secondary significance, due to increased toxic effects on sprouts; therefore, perennial plants (Arctium lappa, Elymus repens, Urtica dioica, etc.) that are capable of vegetative reproduction become more widespread. Perennial plants dominate on the majority of accounting areas; the share of both annual and biennial species is increasing with the remoteness from the warehouse. The maximum percentage of perennials (80%) was detected within the area of 50 m from the source of pollution.

In the phytocenosis of the investigated area, there are both ruderal weeds and meadow species. With the distance from the source of pollution increases the proportion of meadow vegetation. Consequently, the plant group varies according to the species richness, the set of species, the density of the vegetation, the number of botanical families and agrobiological groups, depending on the proximity to the source of pollution.

According to the results of research and data of accounting surveys of experimental years, it can be concluded that at a distance of 50 m from the warehouse where soil pollution with the residues of organochlorine pesticides decreases, there are better conditions for seed reproduction of plants and

maximum germination of plants in the spring, which is confirmed by the largest vegetation density cover and the number of species represented in the natural environment compared with other variants. The soil, taken at distances of 2 and 10 m from the warehouse, is contaminated with significant concentrations of organochlorine pesticides. Therefore, in comparison with the consideration of vegetation at a distance of 50 m from the warehouse, the species diversity and density of vegetation cover on the studied plots is markedly impoverished. The fixation of some wild plants in the plant group shows the tolerance of these species to the negative impact of pesticides.

Conclusions. In the conditions of the pesticide pollution of the territory formed phytocenosis, which dominated by perennial species of plants with the ability to vegetative reproduction. The plant grouping of the investigated area is represented by 21 species of wild plants, and, depending on its proximity to the source of pollution, varies according to species richness, the variety of species, vegetation density and number of botanical families. The smallest species saturation and the minimum vegetation density are observed in the immediate vicinity to the source of pollution – 2–5 m, and the maximum percentage of perennial plants (80 %) is found within the area of 50 m from the source of contamination.

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