SPATIAL OPTIMIZATION OF WINDBREAKS' SYSTEM

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It has been described the necessary of optimal placement of windbreaks in the forest-agricultural landscapes in article, which are one of the determining factors of a positive impact on the surrounding areas, because chosen correctly the direction and distance between windbreaks ensure maximum counteracting to the negative natural phenomena, such as wind, and provide sustainable use of agricultural land. Also it's described an important role of windbreaks in determining of the structure of the National Ecological Network of Ukraine to preserve the spatial integrity of areas with natural or partly natural landscapes.

The aim of the research was analysis of the current spatial location and spatial optimization of windbreaks system within Trostyanetskyi administrative district of Vinnytsia region, taking into account current environmental needs of society.

The base material is data of 7 temporary sample plots in windbreaks, which form a system; satellite photos of Trostyanets district, Vinnytsia region using the software Google Earth. The integral wind rose graph has been built according to the perennial data of meteorological station.

Optimum placements of windbreaks ensured with compliance with the scientifically based recommendations for the direction, the distance between them, the structure of the longitudinal-vertical profile.

There is calculated windbreaks cover in article as parameter of optimization of land use structure using the software Google Earth, upon which spatial extra-windbreaks location is optimized for creation of the optimal forest-agricultural landscape. Trostyanets district of Vinnitsa region, which belonging to the sites of chernozem Forest-steppe, is characterized by existing windbreaks cover at 1.0%, which is 2.5-5 times lower than the optimum value.

For a separate part (model agricultural landscapes) farmland analysis of actual windbreaks cover, the wind rose, the direction of the main windbreaks and the distance between them gives grounds to assert that it is necessary to design addition

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for windbreaks' system using existing windbreaks as transverse. Also it is found discrepancy to recommend construction of windbreaks, which reduces their agroforestry effect. Afforestation project for model of agricultural landscape where the detailed analysis of windbreaks' system has been done implies an increase in the existing forest cover with 1.4% to 3.2%, which corresponds to the standards for chernozem Forest-steppe zone 3-5%.

There is designed a set of measures, taking into account the needs of modern landscape and biological diversity conservation. With growing needs for conservation of landscape and biodiversity, optimization of the allocation of windbreaks appropriate conduct within the building of the National Ecological Network. In particular, in Trostyanetskyi district Vinnytsia region three objects of nature-reserve fund of national significance may be key areas (natural cores), the remaining 22 of local significance – the guide points of spatial configuration of the corridors, as that may be windbreaks with signs of forest