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Farmers’ and academia’s views”

## Assessment of phytodiversity in organic agricultural landscape of central Ukraine

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### Abstract

Biотopes such as ecotones, forest shelter belts (FSBs) and fields are marginal habitats in the agricultural landscape. However, despite their small size, they are repositories of natural vegetation and species-rich animal groups. They are especially important in areas where the intensification of agricultural work reduces the ecological quality of the landscape. They support biodiversity, help maintain the sustainability of surrounding agro-ecosystems and provide them with important ecosystem services (pollinator services, habitat conservation and biodiversity, etc.), as a barrier to pollution and ecological corridors, and support life cycles, food chains and energy transmission in ecosystems, etc.

Our study was conducted on organic agricultural lands (Skvyra, Kyiv region; Ukraine) from 2019 to 2021. Organic crops along the perimeter of the field with an area of 40 hectares are protected by four FSBs of different assessment and sanitary characteristics.

We studied the dynamics of biodiversity in the organic agro-landscape in three types of habitats according to the gradient of anthropogenic impact – segetal (fields,  $n = 6$ ), ruderal (ecotones,  $n = 14$ ; on wheat, oats, soybeans, milk thistle crops), FSBs ( $n = 4$ ). As a result of data analysis, 128 higher plants belonging to three divisions, 4 classes of 45 families, 85 genera were identified in ecotones and fields of organic crops in 3 years. In FSB 92 species, in ecotones 113 species, in fields 52 species were found. Field weeds occur in ecotones – 38 species (29.7%), in the field – 29 species 24.7% of identified species.

For Shannon’s indice, biodiversity decreases from FSBs through ecotones to fields, this is explained by the transformative impact of humans in monoculture fields. The high biodiversity rate in ecotones and the highest in FSB indicate the ability of these habitats to perform biodiversity preservation ecosystem services.

**Keywords:** Biodiversity, ecotones, forest shelter belts, habitats, organic agriculture