Factors affecting diversity of plants in agricultural landscape

Zuzana Drillet[1] *& Ľuboš Halada*[2]

1 *Department of Landscape Ecology of the Slovak Academy of Sciences, Bratislava 814 99, Slovakia, e-mail: zuzimriska@yahoo.com*
2 *Department of Landscape Ecology of the Slovak Academy of Sciences, branch Nitra, Akademicka 2, Nitra 949 01, Slovakia*

The study area Malá Lehota belongs to economically marginal area with high proportion of semi-natural vegetation. In the presented work we applied a holistic approach in the study of factors affecting biodiversity of farmland habitats (e.g. meadows, pastures, orchards, grassland balks, road margins and small scale fields) in changing socio-economic conditions. This approach required us to look at environmental, management factors and other related factors e.g. landscape metric indices, socio-economic and legislation factors. Environmental factors and landscape metrics indices were found to be less important determinants of species richness, compared to the management factors of the studied sites. The results further strongly emphasize the importance of extensive traditional management for preservation of the greatest biodiversity in the study area.

Keywords: biodiversity, Shannon index, farmland habitats, Slovakia

Diversity of dry grassland vegetation in Slovakia

Daniela Dúbravková[1]*, Monika Janišová*[1]*, Jaroslav Košťál*[2] *& Iveta Škodová*[1]

1 *Institute of Botany, Slovak Academy of Sciences, Dúbravská cesta 9, 845 23 Bratislava, Slovak Republic, e-mail: daniela.dubravkova@savba.sk*
2 *Department of Ecology and Environmentalism, Faculty of Natural Sciences, Constantine the Philosopher University in Nitra, A. Hlinku 1, 949 01 Nitra, e-mail: kostaljar@gmail.com*

The contribution brings an overview of the diversity of dry grassland vegetation (*Festuco-Brometea*) in Slovakia. Geographically, Slovakia includes the Western Carpathians and the northern part of the Pannonian Basin. In this territory, 21 dry grassland associations occur. They are classified in the alliances *Bromo pannonici-Festucion pallentis* (rocky Pannonian grasslands), *Diantho lumnitzerii-Seslerion* (dealpine *Sesleria*-dominated grasslands), *Festucion valesiacae* (narrow-leaved continental steppe grasslands), *Cirsio-Brachypodion pinnati* (sub-continental semi-dry grasslands), *Bromion erecti* (sub-atlantic semi-dry grasslands) and *Koelerio-Phleion phleoidis* (dry grasslands on acidic soils). We show the most valuable dry grassland sites, endangered steppe species and discuss the main threats which these vegetation types face at present. We also consider the appropriate management of the dry grassland types.

This contribution was supported by a grant through the EEA Financial Mechanism and the Norwegian Financial Mechanism and from the state budget of the Slovak Republic (SK0115), Science Grant Agency of Ministry of Education of the Slovak Republic and Slovak Academy of Sciences (VEGA 2/0181/09) and Slovak Research and Development Agency (APVT-51-015804).

Response of plant species diversity, functional groups, and species composition to management regimes in Pannonian dry grasslands of Lower Austria

Thorsten Englisch[1]

1 *Faculty Centre Biodiversity, University of Vienna, Rennweg 61 / 22 A-1030 Vienna, Austria, e-mail: thorsten.englisch@univie.ac.at*

Dry grasslands of the Hainburger Berge, situated in the Pannonian region of Lower Austria, are a hot spot of rare, threatened and endangered plant species. They contain various thermo/xerophilous habitats, but less than 5 % are lacking of anthropogenic influence. As large areas secondary grasslands, there is a need of continuous management measures to restrain the succession by encroached scrubs and trees, and to assure long-term persistence of dry grassland species and viability of its populations in an open landscape.

To assess success of current management measures for compliance of protection targets, a monitoring framework of different livestock and varying grazing intensities was performed over a 5-year period. Multivariate statistics and Indicator species analysis revealed only weak relationship of diversity measures to management type, whereas species composition (of a total of 170 vascular plant species), functional groups and species abundance indicated consistent shifts in relation to grazing intensities, additionally affected by site characteristics. Usage and benefit of functional species groups, surrogate and target species are discussed in context of long-term preservation of highly valuable steppic grasslands of the Pannonian region.