



STUDYING DYNAMICS OF CRYPTOGAMIC COMMUNITIES IN ACIDIC PANNONIAN DRY GRASSLANDS CAUSED BY MANAGEMENT CHANGE

Kriptogám közösségek kezelésváltozás okozta dinamikájának elemzése
mészkerülő pannon szárazgyepekben

**Rebeka Aszalósné Balogh^{1,2*}, Edit Farkas³, Júlia Tüdősné Budai⁴
László Lőkös⁵ & Gábor Matus²**

¹Department of Applied Plant Biology, Institute of Crop Sciences, University of Debrecen, Böszörményi u. 138, 4032 Debrecen, Hungary; ²Department of Botany, Institute of Biology and Ecology, Faculty of Sciences & Technology, University of Debrecen, Egyetem tér 1, 4032 Debrecen, Hungary; ³Institute of Ecology and Botany, Centre for Ecological Research, Alkotmány u. 2–4, 2163 Vácrátót, Hungary; ⁴Hungarian University of Agriculture and Life Sciences, Research Institute of Karcag, Kisújszállási u. 166, 5300 Karcag, Hungary; ⁵Department of Botany, Hungarian Natural History Museum, Pf. 137, 1431 Budapest, Hungary;

*E-mail: rbalogh@agr.unideb.hu

Lichens and bryophytes, often neglected in vegetation dynamics studies, compose a large part of biomass and can largely contribute to the biodiversity at sandy grasslands. Since the work of Verseggy (1970s), their productivity has hardly been analyzed in Hungary. We studied dynamics of cryptogams at two East-Hungarian dry sandy grassland sites. The sites of *Corynephorus canescens* and of *Festuca vaginata* dominance, respectively, belonging to the community *Festuco vaginatae-Corynephorum* have been monitored. We aimed at 1) quantifying the floristic composition, diversity and biomass of terricolous cryptogamic communities; 2) exploring the response of cryptogams to management changes (subject to different grazing pressure); 3) studying the effect of an experimental change (fencing) of management on the cryptogamic assemblages also with regard to the performance of the legally protected lichen, *Cladonia magyarica*. Cryptogamic vegetation has been compared in both sites in 2013 and 2018, respectively, at an experimentally fenced part as well as a non-fenced part subject to changing grazing pressures, respectively. Forty microplots per site per management have been analyzed in both years. Samples of lichens and bryophytes were hand-sorted, dried then measured. Spot tests and HPTLC have also been applied in identification of lichen taxa in addition to morphological studies. Fencing has led to increased biomass of cryptogams within a few years. Lichens in general benefited comparatively more from enclosure than did bryophytes. Increase of lichen biomass (especially that of *Cladonia rangiformis*) was clearly due to the over 10-year absence of grazing. The only lichen favoured by moderate grazing was the legally protected *C. magyarica*. Short spells of low intensity grazing can promote species richness of cryptogams in the community.