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SPECIES COMPOSITION AND BIOMASS OF CRYPTOGAM COMMUNITIES IN GRAZED AND FENCED *CORYNEPHORUS* GRASSLANDS OF THE NYÍRSÉG REGION

Kriptogám közösség összetétele és biomasszája legelt és bekerített nyírségi *Corynephorus* gyepben

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We investigated the effects of long-term grazing exclusion on cryptogam communities in an open dry sandy grassland dominated by *Corynephorus canescens* on the southern margin of the Nyírség region, Hungary. In March 2024, we surveyed cryptogam species composition and biomass in a grazed 5 × 25 m plot and in a same sized adjacent plot fenced since 2008. The study was conducted on acidic Pleistocene sandy soil using permanent quadrats. Forty soil monoliths (10 × 10 × 5 cm) were collected from each treatment. Cryptogams were separated manually under a stereomicroscope, identified using morphological characters, chemical spot tests, and high-performance thin-layer chromatography (HPTLC), and their biomass was measured with 0.001 g precision. Differences between treatments were analysed using the Mann–Whitney U test, while biomass fractions were compared using Spearman's rank correlation.

The *Corynephorus canescens* dominated grassland supported species-poor cryptogam communities, with seven recorded taxa, including four lichen and three bryophyte species. All identified lichens belonged to the genus *Cladonia*, including the protected *Cladonia magyarica*. Total cryptogam biomass reached 187 g/m^2 in the grazed plot and 326 g/m^2 in the fenced plot. Lichen biomass in the fenced area was nearly seven times higher than in the grazed area, whereas bryophyte biomass was approximately 3.5 times higher in the grazed plot. Cryptogam biomass was significantly higher in the fenced treatment, while species richness showed no significant difference between treatments.

Our results indicate that long-term grazing exclusion promotes cryptogam biomass accumulation, particularly through increased lichen abundance, whereas grazing maintains higher bryophyte biomass. Over time, further biomass increase is expected in the fenced area, while cryptogam biomass in grazed habitats is likely to respond to changes in grazing intensity. Lower grazing pressure may contribute to the development of more stable microhabitats for cryptogam communities.