

Changes in sward composition under different grazing management

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Key words: grassland, continuous grazing, cattle, Principle Response Curve, grazing intensity

Introduction Suitable grassland management and its intensity depended on present vegetation, local possibilities and our target goal. Grazing seems to be an interesting alternative to cutting in order to maintain species-rich grasslands.

Materials and methods Introducing intensive and extensive grazing on abandoned grassland was studied in years 1998-2004. Applied treatments were: intensive grazing (IG), 1st cut followed by intensive grazing (ICG), extensive grazing (EG), 1st cut followed by extensive grazing (ECG), and unmanaged grassland (U) as the control. Experimental paddocks were replicated twice. Relevés were made in permanent 1 m × 1 m plots using a continuous grid of nine 0.33 m × 0.33 m subplots in four

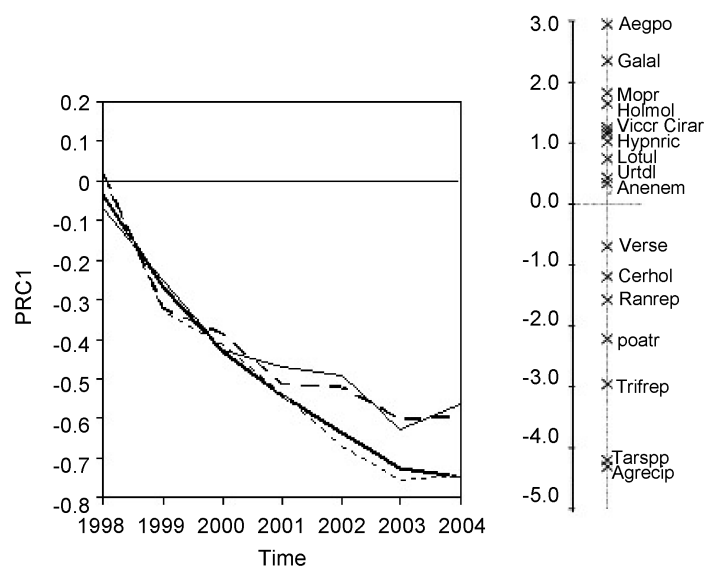


Figure 1 PRC for different treatments ECG (---), EG (—), ICG (.....), IG (—) during the experiment. The unmanaged treatment (U) was taken as a reference treatment. Abbreviation: Aegpo-Aegopodium podagraria, Agrcap-Agrostis capillaris, Alopr-Alopecurus pratensis, Anenem-Anemone nemorosa, Cerhol-Cerastium holosteoides, Cirar-Cirsium arvense, Galal-Galium album, Holmol-Holcus mollis, Hypmac-Hypericum maculatum, Lotul-Lotus uliginosus, Poatr-Poa trivialis, Ranrep-Ranunculus repens, Tarspp-Taraxacum spp., Trifrep-Trifolium repens, Urtdl-Urtica dioica, Verse-Veronica serpyllifolia, Viccr-Vicia cracca.

replications in each paddock. Redundancy analysis (RDA) and principal response curves (PRC) in the CANOCO program was used to evaluate vegetation data.

Results and discussion There was a shift from tall to short plant species in all managed treatments, which indicated the change in grassland community. PRC analyses based on RDA shows that diversification in plant species composition created by different defoliation occurred in the fourth year of the study (Figure 1). All management treatments with negative PRC scores have higher abundance of *Taraxacum* spp., *A. capillaris* and *T. repens*, whereas unmanaged plots become dominated by tall species (*Aegopodium podagraria*, *Galium album*, *Alopecurus pratensis*, *Holcus mollis*, *Vicia cracca*, *Cirsium arvense*, *Hypericum maculatum* and *Urtica dioica*).

Conclusion Plant species composition of semi-natural grasslands is affected by the defoliation regime (Pavlů et al. 2007).

Acknowledgement This research was supported by MACR 0002700601 and MEGR SP/2D3/179/07.

Reference

Pavlů, V., Hejčman, M., Pavlů, L., Gaisler, J. 2007. Restoration of grazing management and its effect on vegetation in an upland grassland. *App. Veg. Sci.* 10, 375-382.