

The influence of land-use changes on the floristic composition of grasslands in the Apuseni Mountains, Romania

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The research presented is part of an inter- and transdisciplinary BMBF project, called 'PROIECT APUSENI' [1]. The grasslands in the study area are of secondary origin, with low productivity and poor forage quality. The hay meadows were fertilised with manure and mown once or twice a year with a scythe, following a traditional method. These extensively used meadows are remarkable for their species diversity and the number of rare plants. The research field is separated into two main parts:

The first part is an analysis of the current situation, including the investigation of the floristic composition and yield potential of different grassland types, the description of the traditional agricultural land use techniques, and a parcellary land use mapping. Fertiliser experiments based on a permanent plot design with different intensities of mineral and organic fertiliser application were established to analyse the effects of different fertilisation regimes on the botanical composition. The statistical analyses were carried out using CANOCO. The results of the Violo-declinatae-Nardetum plots treated with mineral fertiliser reveal an increase in the percentage of the grasses and a decrease

in the number of plants from other plant families (Fig. 1).

The second part of the study deals with the identification of indicators and the evaluation of grassland use in terms of nature conservation (hemeroby, rareness / endangerment) and economics (yield potential, working time, suitability of agricultural use to specific sites, etc.). The results of the studies lay the foundations for the creation of model-based scenarios, relating to future development alternatives of mountain grassland under varying economic and political conditions and constraints. This modelling process is an element of an intergraded landscape model [1].

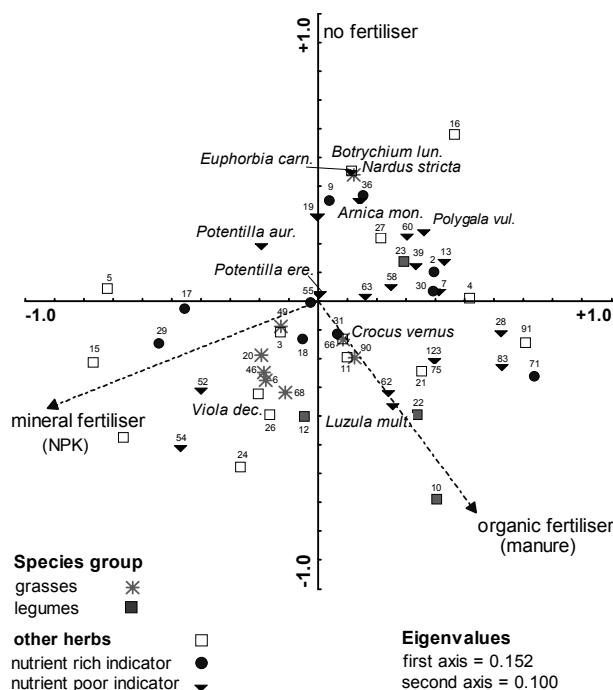


Fig. 1: Results of the Redundancy Analysis

Reference

- [1] Rusdea E, Reif A, Povara I, Konold W (eds.) (2004) Perspektiven für einer traditionelle Kulturlandschaft in Osteuropa. Ergebnisse eines inter- und transdisziplinären Forschungsprojektes in Osteuropa. Culterra 34. (in print).

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