



Czech University of Life Sciences Prague

Faculty of Environmental Sciences

GRASSLAND ECOLOGY AND MANAGEMENT RESEARCH TEAM

Team introduction:

Grasslands are very important part of the European landscape. The grazing of large herbivores is the most common land use of grassland worldwide. Recently the aspects of grazing along with non-productive grassland functions have been the subject of research and deserve particular attention in the field of science. Our research team has long-term experience with research and has published more than 60 papers in leading scientific journals on the following topics:

1. Grazing management – the studies are focused on grassland ecology and ecology of vascular plant species, aspects of different grazing intensities and ethology of large herbivores. The 14-year controlled management history in the largest grazing management experiment in the Czech Republic is the background for this research.
2. Weed species in grasslands – our research is focused especially on ecology and control of *Rumex obtusifolius* and other weedy species under different management practices.
3. Fertilization and plant nutrition – these studies are closely connected to the previous topics. Our studies are concerned with circulation of phosphorus in soil and plants, N isotopes and enrichment of N15 in soil organic matter and plant biomass. We are working on several decades-long grassland fertilizer experiments in the Czech Republic and Germany.

Team members:

The team consists of experienced academic researchers, assisted by young researchers and PhD students. The members of the research team are:

Profs:

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PhD students:

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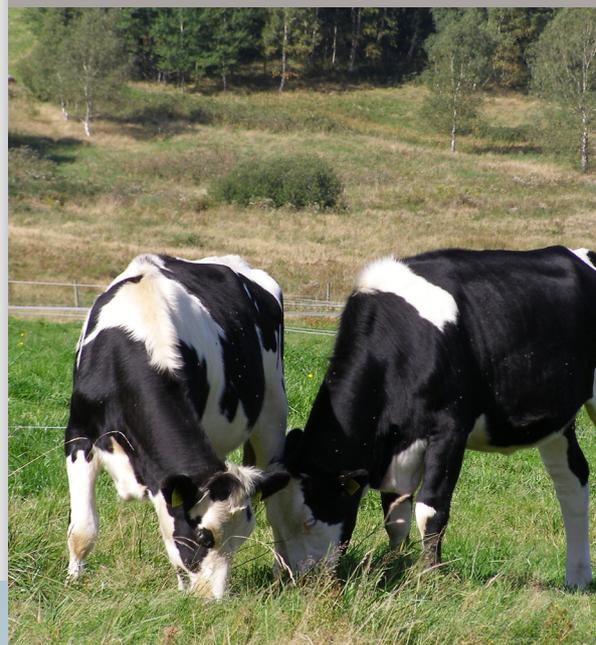
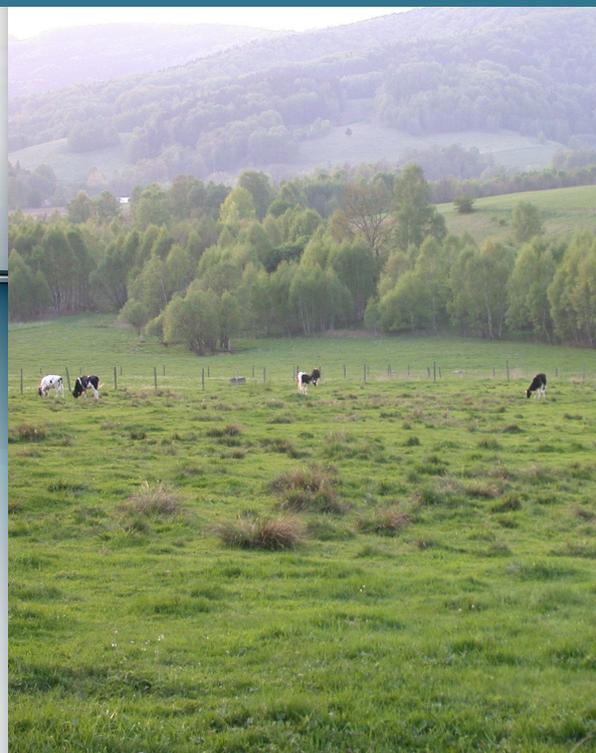
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5 most significant recent publications by team members:

Hejcman, M., Strnad, L., Hejcmanová, P. and Pavlů, V. 2012. Response of plant species composition, biomass production and biomass chemical properties to high N, P and K application rates in *Dactylis glomerata*- and *Festuca arundinacea*-dominated grassland. *Grass and Forage Science*. In press.

Hejcman, M., Száková, J., Schellberg, J., Šrek, P., Tlustoš, P. and Balík, J. 2010. The Rengen Grassland experiment: bryophytes biomass and element concentrations after 65 years of fertilizer application. *Environmental Monitoring and Assessment* 166: 653-662.

Křišťálová, V., Hejcman, M., Červená, K. and Pavlů, V. 2011. Effect of nitrogen and phosphorus availability on the emergence, growth and over-wintering of *Rumex crispus* and *Rumex obtusifolius*. *Grass and Forage Science*, 66: 361-369.

Pavlů, V., Hejcman, M. and Mikulka, J., 2009. Cover estimation versus density counting in species-rich pasture under different grazing intensities. *Environmental Monitoring and Assessment* 156: 419-424.

Pavlů, V., Schellberg, J. and Hejcman, M. 2011. Cutting frequency vs. N application: effect of a 20-year management in *Lolium-Cynosuretum* grassland. *Grass and Forage Science*, 66, 501-515.

Applied outcomes of the research and further potential applications of the research:

- Published methodological tools with recommendations for grassland management for agriculture professionals.
- Applications for proposed effective agri-environment schemes.
- Baseline data for agriculture and environment subsidy policies.



Keywords: *Fertilization, grazing management, heavy metals, weed species, plant nutrition*