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Přírodovědecká fakulta
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Long-term functioning of a species-rich mountain meadow
under different management régimes

RNDr. Thesis
Rigorózní práce

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České Budějovice 2008

Mašková, Z., 2008. Long-term functioning of a species-rich mountain meadow under different management régimes. RNDr. Thesis, in English. - 28 pp., Faculty of Science, University of South Bohemia, České Budějovice, Czech Republic.

Annotation:

The aim of this study is to assess the effect of different management practices on mountain meadow plant biomass, species richness and diversity. We applied three treatments (mowing, mulching, abandonment - fallow) to a mountain meadow with dominant *Deschampsia cespitosa*, *Agrostis capillaris*, *Festuca rubra* and *Hypericum maculatum*. The aboveground biomass was significantly highest in the fallow treatment and lowest in the mown one, the belowground biomass was the lowest in the fallow treatment and the highest in the mown one. The litter accumulation was higher in the fallow treatment than in the mulched one, where, nonetheless, the mulched material persisted for more than one growing season.

The treatments significantly affected the plant species diversity and shifts of dominance among certain species were observed. Decrease of the species richness was observed in the fallow plot, while slightly lowered Shannon diversity and evenness were observed in the mown plot. If regular mowing of mountain meadows is not feasible for economic or technical reasons, mulching can represent an economically advantageous alternative. It will temporarily check the successional changes that sooner or later occur in meadows left fallow.

I declare hereby that I worked out this thesis on my own only with the use of the cited literature and other cited sources.

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Datum: 25.11. 2008

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Submitted to Agriculture, Ecosystems and Environment

Abstract

The aim of this study is to assess the effect of different management practices on mountain meadow plant biomass, species richness and diversity. The experiment was carried out in the Bohemian Forest Mts. at the altitude of 1150 to 1170 m for 10 years. We applied three treatments (mowing, mulching, abandonment - fallow) to a mountain meadow with dominant *Deschampsia cespitosa*, *Agrostis capillaris*, *Festuca rubra* and *Hypericum maculatum*. The aboveground biomass was significantly highest in the fallow treatment and lowest in the mown one, the belowground biomass was the lowest in the fallow treatment and the highest in the mown one. The litter accumulation was higher in the fallow treatment than in the mulched one, where, nonetheless, the mulched material persisted for more than one growing season.

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Keywords: Šumava National Park and Biosphere Reserve, grassland management, plant biomass, litter, species dominance, green herbage ratio