

# THE INFLUENCE OF MINERAL AND ORGANIC LONG-TERM FERTILIZATION UPON THE FLORISTIC COMPOSITION OF *Festuca rubra* L.-*Agrostis capillaris* L. GRASSLAND IN APUSENI MOUNTAINS, ROMANIA

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## Abstract

The semi-natural grasslands in Apuseni Mountains are particularly important for the sustainable development of this region. The future development strategies must take into consideration the conservation of grassland plant diversity. In Apuseni Mountains there are numerous caves and a traditional landscape, these forming the area's wealth. Their joining with agro-tourism and performing a sustainable agriculture would significantly level up the wellbeing of the local population, who are in need of new income sources considering that the wood resources are more and more reduced. In Gârda de Sus there are considerable areas of semi-natural grasslands which lately have been traditionally used. Nowadays, some of them have been abandoned and others irrationally intensified. Therefore, the objective of this paper was to evaluate the effects of organic fertilization upon the sward in order to recommend certain versions which have minor repercussions upon the plant diversity. The research was carried out in Apuseni Mountains, in an experimental field with one experiences with organic fertilizers (T<sub>1</sub> control, T<sub>2</sub> 10 t ha<sup>-1</sup> manure, T<sub>3</sub> 20 t ha<sup>-1</sup> manure, T<sub>4</sub> 30 t ha<sup>-1</sup> manure). Giving organic fertilizers caused installation of *Festuca rubra* L. and *Trisetum flavescens* L. at the treatment using 10 t ha<sup>-1</sup> manure and *Trisetum flavescens* L. at using 20 and 30 t ha<sup>-1</sup> manure. The treatment with 10 t ha<sup>-1</sup> manure induced a growth of the plant diversity and by raising the manure quantity did not cause important changes with respect to the species' number. For future management actions that are meant to maintain the plant diversity in Apuseni Mountains, the organic fertilization with 10 t ha<sup>-1</sup> manure quantities annually administrated or once in two years is recommended.

**Key words:** mountainous grassland, organic fertilization, plant diversity, frequency of the species, abundance of the species