

## STUDIES REGARDING THE EVOLUTION OF GRASSLAND PRODUCTIVITY FROM CODRU MOMA MOUNTAINS (WESTERN CARPATHIANS)

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**Abstract.** Knowledge of the dynamics of floristic composition and the productivity of permanent grasslands has a special scientific and practical value. This work presents a comparative study of grassland vegetation in 1937 and in 2011 in terms of floristics and productivity for 4 phytocoenoses spread in the Codru Moma Mountains in the northern part of Western Carpathians (Apuseni Mountains). After almost three quarters of a century, *Festuceto rubrae-Agrostetum capillaris* and *Anthoxantho-Agrostetum capillaris* associations located near the localities used for grazing as communal pastures or hayfields, have generally preserved their biodiversity, increased their pastoral value by 8-23% and the fodder green mass production by 21-22%. Instead *Poterio-Festucetum valesiaca* association located on steep slopes and sunny exhibitions together with the *Nardo-Festucetum rubrae fallax* association, both located at greater distances from localities, during the same period, decreased their pastoral value by 13-39% and fodder green mass production by 17-35%. At a more detailed analysis of the *Nardo-Festucetum rubrae fallax* association, it was found that the invasive *Nardus stricta* species from an average participation of 45.6% in 1937 reached 66.9% in 2011, respectively by more than 20%, indicating the stage of continuous degradation of the herbaceous layer and decreasing productivity.

**Keywords:** grassland vegetation, productivity dynamics, carrying capacity

### 1. Introduction

The study of the herbaceous layer of the grasslands has a special importance both for phytocenological classification and for establishing improvement measures and rational use included in pastoral arrangements.

New evaluation methods of grassland phytocoenosis productivity based on floristic surveys made it possible to establish the evolution in dynamics of this very important indicator for the pastoral economy [3].

Till now there have been few studies on grassland productivity dynamics of which we mention the one made on the steppe grasslands after 45-50 years from the Babadag and Casimcea plateaus from Dobrogea [4].

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